

Aviation News

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MAY 8, 1944

400-Passenger Super-Transport

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Final draft of declaration drawn up by top manufacturing officials at Los Angeles calls for air commerce expansion.....Page 29

Lightplane Leaders Discuss Design

Record crowd gathers at Detroit for sessions on production and distribution, backed by Aeronautical Sciences Institute..Page 20

Disposal of Excess Inventories

Legal problems hold up plan for segregation, storage and sale of surplus materials; title to be transferred to U. S.....Page 12



First Flight Photos of Two New Helicopter Models: Despite predictions of cautious engineers that popular use of helicopters is at least ten years off, work on machines for post-war production continues apace. Top photo shows a two-place job which Bell Aircraft Corp. has been flying in secret more than a year. Lower picture shows a model that has been undergoing endurance tests by Aeronautical Products, Inc., of Detroit and Washington Court House, Ohio. (Story on page 7.)



Big Wing leads — its show and its fight

Through the Roof

The whole vast area of congested Europe is a Nazi stronghold. Massive walls and powerful fortifications defend it—all so tightly impregnable as Hitler says make them.

But overhead there are no walls. It is through the roof that Allied bombers have rattled the heaviest blows on Germany's war-making machine.

To the violent young Americans who man the Boeing Flying Fortress, "through the roof" now has an added significance. On days when there was a dark excess, Europe was over its full power prison bombing. Today men hangover, desire enable the Fortress

bombardiers to hit her target through dense cloud cover with almost the same accuracy accuracy as in clear air. The first rule by the Fortress is to make under just such conditions.

The deadly bombing done by the big Boeing planes has become a matter of wonder, not only to our Allies but to the enemy. After Flying Fortresses had demolished the Meuse-Rhin plan at Remagen without allowing a single bomb to fall on a hospital which was previously a part of the factory area, our English Air Force then got a special radio message from the Luftwaffe. The text of it was: "Congratulations on your accuracy. We don't know how you do it."

The Fortress crew know the answer. It is done by cool courage, skill and training, and by the heading stability of the steady flying Fortress.

Some day Boeing's design, engineering and manufacturing skills will be tested again in production of peace. You can be sure of any such product . . . if it's built by Boeing, it's bound to be good.

NEW AIR FORCE COMBAT FILM
The Army Air Force screen picture, "The Memphis Belle," shows home crews of Boeing Flying Fortresses in actual combat over Germany. See it at your local theater.

Washington Observer

CNF REORGANIZATION—Wholesale revision in the Controlled Materials Plan are in the cards, although nothing definite has taken shape. Faced at its achievement in solving the chronic materials distribution problem, WPA shrinks from abandoning CNF but realizes the plan can't be retained passively, with re-conversion problem in sight. Total result to date: Much studying and drafting, many meetings, no decision.

FORWARD PRICING SYSTEM—Army, Navy and Maritime procurement officers are engaged in refining the "forward pricing" plan which will begin to replace presentation as a means of expediting purchase orders. No replacement date is set but Gen. Starnesville feels the changeover should come about midyear.

LABOR'S VOICE—Labor is demanding and getting increasing attention in contract termination discussions. Subject of dismissal wages to discharged workers is becoming frequently hot. Harrow, for example, after careful consideration, believes the medium of dismissal wages is inadequate to provide financial aid to those who will become unemployed as a result of new contract termination. In his opinion the only satisfactory way of coping with that problem is through unemployment compensation.

MUNITIONS COST BASIS—When WPA announces its monthly munitions production volume, aircraft as well as other war items are now figured on the basis of costs to the government as of August, 1943. Formerly, 1942 costs were used. Since all items declined in cost as result of increased production the number of

aircraft making up any designated dollar volume is relatively larger than previously.

DEMAND FOR LAWYERS—Although opportunities for Army commission have shriveled, the adjusted general's office is surveying applications filed by lawyers who will be needed in constant consultation work.

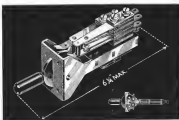
WTR HOPES FADE—Washington opinion is that only a miracle will save any part of the War Training Service program. Petroleum hearings by the Interstate and Foreign Commerce Committee may delay action for two weeks on the House version of the Civilian Pilot Training Act Bill. The Senate has already passed Sen. McCarran's bill to continue the program.

MANPOWER STATISTICS—High Army officers give this explanation for conflicting statements on manpower requirements. First, the Army must estimate its needs far out as much as seven months ahead. The War Department requires a month to get corrected figures on the number of men already in the Army. Then it gives Selective Service its data on excess reduction of what requirements will be. Next the Army must estimate its losses for the next four months to obtain requirements. Then, if Selective Service fails to deliver its quota, or catches up to schedule, all estimates are thrown off balance. By and from now on it is replace losses—which means more young men.

SURPLUS SALES EXPERIMENT—The manufacturing industry is watching the results of Beech Aircraft's experiment in channeling

Record-smashing Constellation at Wright Field for Army tests





You Can Have This MOSSMAN HEAVY DUTY LEVER SWITCH Almost Any Way You Want It

If your requirements call for a Heavy Duty Lever Switch with up to 48 springs, use the Mossman 4101 Switch. There is nothing stereotyped about this heavy duty switch except the quality.

Any combination of six basic contact forms are available in order that this versatile switch shall most exactly meet your needs. Inverted forms may also be provided.

Standard heavy duty contacts give the Mossman 4101 Heavy Duty Lever Switch a rating of 10 amperes, 180 volts A.C. (non-inductive). These are of 3/16" diameter fine silver. For higher rating, extra heavy duty contacts of 5/16" diameter, silver alloy, permit use of 20 amperes, 180 volts A.C. (non-inductive).

But when it comes to high grade, precise construction of quality materials, the Mossman 4101 Heavy Duty Lever Switch permits of no deviation.

The Mossman 4101 Heavy Duty Lever Switch is built to give positive action at all times without regard to vibration or shock. The positive action is reliable and independent of the pressure of the contact springs.

Send for new catalog for complete description of the 4101 Lever Switch and the many other Mossman precision electrical components. These include many types of heavy duty multiple circuit lever switches, two switches, push switches, plug locks and special switching components.

DONALD P. MOSSMAN, Inc.
6133 N. Northwest Highway, Chicago (31), Illinois

MOSSMAN
Electrical Components

AVIATION NEWS

May 8, 1944

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Editorial Headquarters,
1202 P National Press Building,
Washington 4, D. C.

Publishing and Executive Offices,
130 W. 42nd St., N. Y. 36, N. Y.

Editorial Office, 1202 National Press Building,
Washington 4, D. C.
Public Office, 1202 National Press Building,
Washington 4, D. C.
Editorial Office, 1202 National Press Building,
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Washington Observer

surplus through a separate Beech-owned company. The surplus-selling company is moving about \$300,000 in surplus steel, aluminum and other materials for Beech and other companies. It handles materials for other companies in that area on a fee basis. It may prove valuable even when the new surplus plant goes into effect, since it permits quick transfer of surplus inventories from the parent company in the event of cancellations.

NEW BOMBING TECHNIQUE—New methods of bombing railroad yards in occupied Europe are making the current raids more effective than might be generally supposed from earlier experience. Bombers, bank damage to railroad centers has been comparatively easy to repair. Terrific concentration of large bombs on rail centers now is plunging up right-of-way to such an extent that repair is becoming a stupendous task. New photos show "highly spectacular" damage. Fissures the rail centers out of action and keeping them out of action will be one of air's contribution to the invasion.

ACCURACY TEST—Master photo interpretation methods to afford newsmen and the public an official version of bombing mission results quickly and accurately, and a corroboration of eyewitness reports may continue to give the American public a truer picture of the bombing of Germany. Eighth Air Force Intelligence officers are dumping down on creosote reports of "great fires," "target devastated" and "smoke rising thousands of feet in the air." They point out that a salvo of heavy bombs will create a lot of smoke and dust, even at high altitudes, and that later photo missions show that the primary target was missed completely.

FLYING BOAT STOCK RISES—Success of the Martin "Mars" now flying, and reports that future production models will carry substantially more cargo were commensally the point, has aroused wide interest in the industry. In more than one company engineers are studying the "Mars" projected ton-mile costs and recovering possibilities of the super-flying boat. Costs of ten cents a ton mile are seen as excellent possibilities, with some experts claiming these can be reduced within a year or two to five cents.

COAST GUARD AVIATION—Although it has received Martin PBM's for patrol, the largest aircraft it has flown, it is unlikely that the Coast Guard's aviation unit will take over any four-

engineered ships in the next year. It is not generally realized that Coast Guard aviation personnel now total only 250 with 154 of these commissioned officers. There are now about 260 Coast Guard planes, of which all but 45 are owned by the Navy, although a total of 490 will be in operation by July of 1944, including 186 helicopters, 115 multi-engine craft and 123 single-engine planes. The Coast Guard has taken over the Greenland patrol and in the West Coast has established an air-sea rescue group. Despite the increase in aircraft to be operated in the coming year, the average number of Coast Guard flyers in training at any time will drop from 250 to 150. The Navy's Pensacola base, aviation training stations, and pre-flight schools are utilized entirely for Coast Guard training. Officials estimate the average course — recently shortened — now costs \$2,500, including uniforms, gas, pay of instructors, plane depreciation, and other expenses paid to the Navy, comparing with about \$2,000 for the earlier 300-hour curriculum.



Portable plane hoist dries out parachute.

RECONVERSION PREPARATIONS—Many automobile assembly plants will be ready for operation within 60 days after they are given the word to tip out aircraft tooling and assembly lines. The big catch will come in getting the parts, engines and bodies to assemble. But automobile men think that problem can be met if subcontract releases and other details are properly scheduled—a tremendous planning job, equaling conversion in war contracts.



FOR THE MEN WHO FLY AND FIGHT IN PLANES AND FOR THE MEN WHO BUILD THEM

Countless youngsters, managing modern war planes, trust their lives to the skill of millions of factory workers. Our part is to help them with products like this automatic safety control, used on anti-ice equipment for bombing planes,



which may be called upon to function once or a thousand times, yet must always be ready to act.

This motorized temperature-modulating control



WHITE-RODGERS ELECTRIC CO.



SAINT LOUIS

is used for maintaining cabin or cockpit temperatures; or for carburetor or air intake temperatures requiring close control.

Such products, as well as the two White-Rodgers Servo Motors shown here, play their part by making more and still more automatic many of the



complex operations it takes to keep our planes flying.

If you are an aircraft manufacturer and need our type of equipment to help build a better plane for our boys, we will gladly supply engineering data and application information.



Mockup of 400-Passenger Plane Shown at Dallas Convair Plant

Projected Model 37, designed as super-transport for post-war production, is mid-wing monoplane of pusher type with six giant air-cooled engines.

By ALEXANDER MASURELY

Newest claimant for post-war super-transport honors, Consolidated-Vultee's air-engine Model 37, whose spacious double deck fuselage will provide accommodations for 400 passengers, was described to the Aviation Week Association members last week at the Dallas Convair plant when aviators viewed a huge full-scale wooden mockup of the projected plane.

Henry Griswold, project engineer, described the transport as "the largest plane ever contemplated" but pointed out that the aircraft could be landed on runways of many of our larger present-day airports, due to extremely large landing gear and bolting from severable pitch propellers. Tom Gordier, Convair chairman, first mentioned existence of the design months ago.

Giant Air-Cooled Engines.—Equipped with giant air-cooled engines of a power not disclosed, the airplane is a mid-wing monoplane of pusher type, and Griswold said the wing used is a new SLACA airfoil design which makes the most of the additional efficiency something out the surface as a result of the pusher design.

Examining the wooden mockup, the aviators, including two representatives of AVIATION NEWS, climbed a wooden ramp leading into a huge entry hatch in the belly of the plane and explored its two decks.

Lucrative Airlines.—Interior of the mockup is not yet finished, but the plane is expected to be fitted later with passenger accommodations comparable to those in the smaller 30-passenger Model 36 recently announced by Convair (AVIATION NEWS Apr. 16).

Griswold said the plane, with a considerably smaller number of passengers, could fly nonstop from New York to London and that one plane could maintain a schedule of three round trips weekly.



WRIGHT BOARDS C-69

Orville Wright, 33, co-inventor of the airplane, always shared the C-69, Lockheed Constellation, at Wright Field, Dayton, for his second career flight in 39 years. During the flight he sat in the cockpit's seat west of the time and issue took the controls.

Post-War Project.—Although the new transport is definitely a post-war project, some of the component parts expected to be used are already being turned out. Convair shares credit with some 16 major manufacturers and still names companies who have done or will do various research and production jobs in connection with the plane.

The single vertical tail fin was designed to simplify production problems. A tricycle landing gear with a double-wheel in the nose is planned. A "bi-wing" de-wing arrangement which saves heat out through the leading edge of the wing is another feature.

Three-Blade Propellers.—The six engines will turn three-blade propellers of very large diameter, which will have the reversible pitch feature mentioned above. The original design does not call for a pressurized cabin.

Fabricated principally of a new type alloy, the plane will include considerable quantities of magnesium.

Two Firms Announce Helicopter Models

Bell and Aeronautical Products, Inc., release photographs of newly developed rotor craft.

Information on two new helicopters became available last week as aviation engineers continued to emphasize that John Q. Public will not be flying rotary wing aircraft from his back yard far at least another ten years.

Bell Aircraft Corp., pioneer in the domestic jet propulsion project, and Aeronautical Products, Inc., of Detroit and Washington Court House, O., permitted release of photographs of their craft.

Bell Model.—Principal characteristics of the two-place Bell machine, which has been flying in secrecy for more than a year, appears to be a stabilizing system that makes the rotor independent of the rest so that it tends to stay in a horizontal plane.

This design has been simplified

May 8-Motion of Board of Directors, National Aeronautics Association, Washington.

May 11, 1946-Schedule in Random Words on just in the Washington Post.

May 12 (Wednesday) Dakota Airport, Phoenix, Arizona, closed.

May 14-15-16-17-National Mailplane and Airplane Meeting, Santa Barbara, California.

May 15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-1946-National Mailplane and Airplane Meeting, Santa Barbara, California.

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Martin Claims New Mars to Have 10c Per Ton-Mile Operating Cost

Air Cargo Research Division set up with view to capturing transportation market for huge volumes of high value freight now carried on rails at express rates.

By SCHOLER BARNES

All bills may be at all new from the standpoint of experts who have predicted freely that the super-size unit will be impractical, or that moderate size and frequent service will be the post-war trend.

Questions, too, the thinking is complicated by the major trans-oceanic airlines whose officials said a year ago "We'll never buy another flying boat."

Prospect: With a view of fact-based opinion, Glenn L. Martin emphasized in San Francisco a week ago.

Buyout: 120,000 pounds gross weight, the flying boat will carry pay load, post-war, by way from the land-based airplane.

There is no limit to the size to which a flying boat can be built.

The Mars flying boat already shows an operating cost of less than 10-cents per ton-mile.

New version, the first to be delivered to the Navy next March, will have an operating cost of 10-cents per ton-mile at 80 per cent cargo capacity.

A 10-mile operating cost, developed from standard airline formula, of 3-cents is in sight.

Martin's assertions are positive, based on operating cost reports at Naval Air Transport Service. Service, which has been flying the Mars between San Francisco and Honolulu, and on design projections of Glenn L. Martin Co. engineers.

Based on Weight Restrictions—The "no limit" formula as to airplane size is predicated on distribution of cargo weight well toward wings of the mail cargo carrier to reduce sharply the shearing stresses developed when heavy weights of cargo are loaded within limited areas extending from the wing's outer section.

The estimate of increasing cargo load capacities of the flying boat over the land-based airplane and size increase is made with consideration of the increasing weight of landing gear necessary as land plane size is increased.

Comparative Costs—As to comparative costs of both types of air-

craft, he says full costs of the land and sea plane are, for a given gross weight design, "within a few dollars of each other."

While admitting at the annual shareholders meeting in Los Angeles a few days earlier that his company plans post-war production of both land-based and sea plane, the 50-year old Mars builder indicated he will green development of the latter flying boat to be early, if not first, in the field of low-cost cargo carrying to win large volumes of high-value freight now carried on rails at express rates.

Research Division Set Up—To this end, his company has set up an air cargo research division that will suggest to airline operators profitable markets that can be captured with big planes—built by Martin.

Martin sees as the first "big money" market for air transport the hauling of loads—perishable

raw fruits and vegetables, deep-frozen foods now surface expressed to serve seasonal markets 1,000 miles and more from processing centers; and South American state-owned bananas, which West Coast banana syndicates handle because of the volume of cargo that will be created through improved taste and texture a new market.

Deep-Frozen Foods—His consideration of deep-frozen food markets is based on reports that present rail express shipment of such foods cost 16 cents per ton-mile for delivery 1,000 miles, the figure combining the expense of deep-freezing by mechanical refrigeration and rail express charges.

"We can undercut the transportation of deep-frozen foods by a large margin by eliminating ground freighting; carrying packaged foods to 20,000 feet and 0-degrees Fahrenheit within an hour after they are aboard the plane," he said.

Load Plans—To what extent Martin's prediction of big plane and flying boat trends will influence an aircraft industry oriented to development of land-based designs for post-war air transport may not be determined for some time to come. He says, however, that several big plane builders have said permission to send engineers to the Martin plant to study the Mars design and operating figures now available on the giant airliner Mars.



ABOARD THE MARS: Glenn L. Martin (right), head of Glenn L. Martin Co., photo, as guest of Naval Air Transport Service, his company's giant Mars is a float over San Francisco Bay. It was the veteran plane builder's first trip at the controls of any airplane since 1932, and mentioned to him because he flew over the scene of one of his first pioneering aviation flights, made in 1912. One of twenty aircraft heads and production officials on the flight was Laurence D. Bell (left), president of Bell Aircraft, about climbing from the Mars' lower deck to flight deck.

Aeronautical Products' New Helicopter: First photo released by Aeronautical Products, Inc., showing newly developed model on test bay. Craft has been undergoing endurance tests for many months.

by use of a two-blade rotor, whose span is 33 feet, operating at 1,100-hp Franklin horizontally opposed six-cylinder engine mounted vertically. Conventional anti-torque procedure is on the tail.

► **Controls.**—Bell spokesmen knew little as for the helicopter in the private flying field soon after the war. Controls are still too complex for the average private citizen and a high degree of skill and technical knowledge is required. Much research and development will be necessary before mass marketing

of the helicopter is undertaken.

Work on the Bell craft began in November, 1943, when Arthur M. Young, who heads the helicopter project, joined the company after working with scale models for more than 12 years.

► **Flies at 100 mph.**—Aeronautical Products, Inc., meanwhile, is running endurance flights on a craft designed by its president, Alfred Jackson, aided by Frank Dehon.

A 30-foot rotor span and a 115-hp six-cylinder engine are rated in a cruising speed of about 100 mph.

New Daily Airframe Record

Airframe weight output per day set new records in April, rose as high as a year ago, and the industry can step up its schedule rate as the war demands revitalize. Heavy bomber production is "very satisfactorily over the 1,000 mark," which was reached last fall.

It still appears likely that the present rate of 4,000 to 5,000 aircraft a month will not be exceeded, however, although rates will continue to vary somewhat from the March record of 5,112 planes.

Seventy-seven percent of the 4,940 aircraft delivered to the services in the 26 working days of April were fighters and bombers, another record. This represented 334 planes per working day, only slightly below March which had 22 working days. Total airframe weight of 40,000,000 pounds was down about 8 percent.

The month's output was slightly below schedule.

A press conference by members of the Aircraft Production Board brought out

C-54 were referred to General Myers. He said they are "different breeds of cats" serving different purposes. The Douglas, another of the war demands revitalize, heavy bomber production is "very satisfactorily over the 1,000 mark," which was reached last fall.

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Questions by newsmen concerning the Consolidated and the

New Device Speeds Engine Changes

Mobile equipment, designed by Southeastern Air Service Inc., has made it possible to change the 120 hp Continental engine in a PZ-17 in 20 to 25 minutes.

The apparatus was designed to meet needs at auxiliary fields, Southeastern officials say. At the Bonaventure, 8 C, AAF Flying Training Detachment school, similar engines have been changed, and four engines in a record

time of 30 minutes, 25 seconds from the time the old engine was stopped until the new engine was running, it was claimed.

Surplus Aircraft Subcommittee Opens Talks on Plane Disposal

Gorell, president of Air Transport Association, cites need of formulating policy before Army can return any sizable volume of planes to airlines.

The Surplus Aircraft Advisory Subcommittee, headed by L. Welch Rease, last week began discussions with aviation leaders that will determine its recommendations to the Surplus War Property Board and Administrator Will Clayton.

One of the first suggestions for aviation industry groups to meet with the subcommittee was Col. Edgar S. Gorell, president of the Air Transport Association. The subcommittee also will hear spokesmen for the Aeronautical Chamber of Commerce and aircraft layout groups.

Surplus Policy Is Available—It is generally understood that a surplus policy will have to be determined before any volume of aircraft can be placed in the hands of the Army in the airlines. This is borne out by a memorandum sent December 15, in which he said that "This matter is one that needs to be decided before many additional aircraft can be set aside for our industry."

The Aircraft Surplus Advisory Committee consists of Rease as chairman, Douglas W. Morgan, chief of Aviation Division of the State Department, Col. F. Trues Davies, chief of special projects, AAF; Rear Admiral Lawrence B. Richardson, Assistant Secretary of Commerce; William A. M. Baedens, Walter E. Joyce, vice-president of the Defense Plant Corp., and Paul T. Derant, chief fiscal analyst of the Army of the Budget.

Known Warplane Problem—This committee, probably after discussion of the surplus transport problem, also will tackle the question of surplus war planes. One suggestion that has been made is to send some of the surplus surplus to South American countries with the idea that the air forces of the hemisphere, with the exception of certain near residential nations, would be equipped and familiar with American planes so that these air forces would fit easily into a hemisphere defense force if that ever becomes necessary. The same suggestion has been made for the expansion of certain Naval air-

The danger of putting such equipment in the hands of governments that may change complexion overnight, however, may operate against such a program, certainly on any extensive scale. It is to the advantage of the American aircraft industry to see that American planes are used in South America, and common plane types would be of great value in case war threatens the southern neighbors.

In this connection, Morgan's experience will be invaluable both for transport and surplus surplus policy in South America, since he had several years' experience as vice-president of the Defense Supplies Corp. in charge of the American Republics Aviation Division. He resigned that post when he joined the State Department, but during his service he supervised the changeover from Army air lines throughout South America.

Planned Inventories Asked—Despite the vast numbers of war-

planes operating, thousands of them, air experts say, will be available except in storage and the problem in this category may not be as serious as some fear. Probably few planes that have been in combat service can be economically kept, even to reserve units, both because of obsolescence and damage. Many will not be worth shipping costs home.

The Aeronautical Chamber of Commerce, in its Los Angeles declaration, took cognizance of this and urged that the inventory be kept on current production to avoid building up of unnecessary inventories and finished planes and spares in reserve. The Chamber suggested that only the most modern surplus military aircraft be stored in reserve.

Timing Held Key—The Chamber termed timing the key to sound disposal, and said that "The most surplus planes are made available for commercial purposes, the more completely will desirable objectives be reached. The immediate use commercially of surplus equipment before new approved models are produced would be of increasing demand for improved equipment."

C-47's Likely to Spearhead Invasion

Many of the more than 3,000 modified DC-3's and C-47's built since the outbreak of war will spearhead the invasion of Europe as units of the Troop Carrier Command, which, the OWI recently revealed, now consists of tens of thousands of paratroopers, glider-borne forces and technical personnel.

The TCC today is larger than the entire air force three years ago and is charged with the delivery and supply of airborne forces in all theaters of war. The role in Europe, if trials coming from England are borne out, will be greater than any yet conceived in modern warfare.

Flies Paratroopers—In operation, the TCC flies the paratroopers who seize fields suitable for landing of the planes and gliders. Basic tactical unit of the Carrier Command is a squadron, comprising enough Douglas transports to carry a platoon of infantry, fully equipped with supplies and three jeeps. After delivery of troops, the planes fly back wounded and supply the fighting forces.

Industry Leaders Pictured in Los Angeles



Leading Aircraft Manufacturers shown at the Los Angeles meeting are, left to right (Seated): J. H. Kesselberger, president of North American; P. G. Johnson, Boeing president; L. C. Good, GM vice-president and general manager of Eastern Aircraft Division; Harry Woodhead, Consolidated Vultee president; Lakota T. Cobb, chairman of Northrop; Guy W. Vesper, Republic-Crane-Wright president; (Standing) Alfred Merckart, president of Cessna; J. Clinton Wood Jr., Fairchild president; Glenn L. Martin, president of the Martin company; J. Claude Ryan, Ryan Aeronautical president; Lawrence D. Bell, president of Bell Aircraft; Robert S. Gross, Lockheed president; Eugene E. Wilson, vice chairman of United Aircraft Corp. and vice chairman of the Aero Chamber; Ernest E. Breach, Breach president, and Raymond F. Gilman, Sperry Gyroscope president.



Left to right are members of the Chamber of Commerce committee Donald Douglas, board vice chairman, E. E. Wilson, E. E. Breach, Glenn L. Martin, P. G. Johnson.



James P. Murray, right, was re-elected president of the ACAA. The job of the new president of Boeing Aircraft Co. will be administration of the Chamber's policies. He is shown here talking with Board Chairman Eugene Wilson.

Water Supply

Water recovery from airplane engine exhausts in the shape of research in water that was made West Coast airplane plant and in independent laboratories serving the Western builders.

Weight-conscious airplane designers are considering seriously the problem of water that will have to be made in carrying water necessary for drinking and washroom purposes in airplanes carrying from 80 to more than 100 passengers on long, non-stop flights, and on longer interrupted flights where landings are made at ports where replenishment of water tanks may not be advisable because of a lack of sanitation control.

Preliminary investigations indicate weight of water recovery apparatus, in crudest concept, replacement of water consumed in flight, will be far less than weight of water taken in storage at the start of flight.



Donald Douglas, board executive and member of the policy-making executive committee, talks things over with George Pyle, publisher of Aviation News, Associate and Air Transport.



Alfred Merckart, F. Claude Ryan, J. H. Kesselberger and P. G. Johnson caught in an impromptu conference.



Reneals Mrs. Dan: Right, Glenn L. Martin, builder of the giant Mars, tells reporters of the plane's performance in operation between San Francisco and Moscow. He had his company's model built, in order, a 120,000-pound gross weight flying boat when war production ends. New model Mars will take off at 135,000 pounds gross.



Legal Problems Hold up Disposal of Excess Plane Plant Inventories

Surplus materials held by aircraft manufacturers to be segregated and stored under program, with title to be transferred to the government.

Legal problems have delayed final decision on policies for the disposal of excess inventories now held by aircraft manufacturers. The aircraft plant calls for segregation and warehousing of the materials with title being transferred to the government.

Two days of conferences were held last week to work out final details of the basic plan, which has been approved by contracting agencies, after which tracing out of legal problems was left to a smaller group.

June 1 Deadline—Industry sources said they were hopeful that the plans would be completed before June 1, when it is possible that physical segregation and accounting of the surplus materials may be completed. However, it is possible that all companies will not have their reports until July 1 because of the extent of the task. No estimates are available as yet, but it has been authoritatively estimated that it will cost \$100,000,000 for the nation's aircraft plants. In some cases, excess inventories exceed the total capitalization of the companies.

Milesville, W. L. Clayton, War Property Administrator, made public his agency's first policy announcement, dealing with policies for surplus property left over from termination of war contracts. This policy would apply after contract cancellations and does not apply to property declared surplus by procuring or receiving agencies of the government, which will be handed over to disposal agencies and handled under regulations to be announced later.

Transfer Title to U. S.—The administration is desirous in transferring title to the government before contract terminations, thus clearing the way for quick conversion in an industry already handicapped by low capitalizations.

Clayton emphasized that his policy pronouncement covers materials that in some cases are the property of the contractor, and in other instances the property of the government. In all cases, it is

property still on the premises of the contractor and not moved into government storage.

The Clayton policy announcement said materials of any type may be sold at the best price obtainable when the claim against the government is less than \$10,000. The contracting office, however, must make a reasonable test of the existing market as a basis for a price decision.

Market Prices—New materials to be sold at the going market price, and if not based on to government disposal agencies—IPC, Treasury Procurement Division, War Food Administration or the Maritime Commission.

Excess property other than new materials may be sold at any level of the best price obtainable in excess of 75 percent of either cost or "the price which that buyer would have to pay if he bought an equivalent quantity from a normal source of supply, whichever is lower." If sale cannot be made on this basis within a reasonable time, property may be sold at the best price obtainable to a "buyer who will contract in the United States for manufacture or maintenance or repair purposes, and who will agree if he does not consume it, not to resell it at a profit."

Sony—Scrap-graded material that can be sold only as scrap to make the responsibility of the procuring agency, and where the amount of property to be scrapped exceeds \$10,000, final determination to scrap will be subject to local, regional or departmental boards of review, "or another officer appointed by the procuring agency." Sales must be at going price, or if such prices cannot be obtained, by bid, with the right reserved to reject all bids if the price is too low.

RAF's New Spitfire Gets Into Action

Disclosure that a new Spitfire fighter plane has gone into action has been made in London, a plane to which outstanding performance at low altitudes has been added to the fighting qualities which have kept the Spitfire in the forefront of the air battle of the west.

Changes from previous models include clipped wings and a longer and more powerful engine, the Rolls-Royce Griffon, giving improved maneuverability, greater speed and rate of climb.

Low Altitude Performance—The British Information Service reported that it was confirmed even prior to the Battle of Britain that performance at low altitudes might well become a deciding factor of the air war. To supplement the high altitude abilities being built, Supermarine began the design of an improved single-seater fighter to be powered by the Rolls-Royce Griffon. These two firms cooperated in the work and in 1942 the first production machine was available.

In the meantime, aerodynamic problems had to be solved. These included the aerodynamically increased size and weight of the new engine in comparison with the Merlin, which necessitated modifications of sections of the aircraft, a new fuselage reinforced and strengthened to support the heavier engine, and a new type of engine mounting.

Design Changes—The prototype, first flown in 1941, was fitted with standard four-blade propellers. It was evident that further changes were necessary and clipped wings were substituted, and an improved radiator added to give maximum maneuverability.

Air War Techniques Described by King

Admiral traces progress of aircraft and anti-aircraft defenses during last ten years.

Development of aircraft and anti-aircraft techniques over a period of ten years prior to the war has been traced in a report of the Navy's war role by Admiral Ernest J. King, commander-in-chief, U. S. Fleet, to the late Secretary of the Navy Kinn.

Although war experience has implemented the anti-aircraft techniques used by the fleet, King's report is interesting in the tracing of the building up of aircraft strength and recognition in the early stages of the role that anti-aircraft equipment would play in naval warfare.

Carrier Effective—King pointed out the sea-based—land-based jet point—drawn from the Washington Arms Conference was the conversion of two battle cruisers into the carriers Lexington and Saratoga. Instead of obsolescent battle cruisers, King said, the carriers were effective fleet units at the outbreak of war, the Lexington was sunk at Midway, the Saratoga is still in action.

"The United States Navy has made no violation of the standard, which all other navies are judged," King said.

In 1933, he brought out the Faragat class destroyers, first to be equipped with the dual purpose gun and 16" caliber dual purpose guns, were either the Faragat type of destroyer was then built into cruisers and battlecruisers. Recent testimony before the House Naval Affairs Committee revealed that this type ammunition consisted the most rapidly expended class used.

New Type Battleships—The North Carolina class battleships were built with the requirements of air warfare taken into consideration, with increased armor penetration against battle, heavy fragmentation protection, Faragat-type anti-aircraft weapons, good torpedo protection and excellent speed and steering qualities for rapid maneuvering. Although King does not bring it out, these battleships also were designed to operate in task forces with destroyers, able to outrun carrier groups and to offer heavy anti-aircraft protection for the carriers.

The 6,800-ton Atlantic class anti-



JAP AIRFIELD DEFENSE IN BURMA:

Photo shows how the Japanese might to prevent landing of glider-borne commando forces in Burma by cutting trees from the nearby forests and dragging them out onto the potential landing area. This area, designated as "Pondilly," was one of two areas selected, and landings—some rough ones—were made at "Broadway." The aircraft are shown in the accompanying photo are glider troops grasped around their aircraft which was damaged in landing.



aircraft carriers were designed in 1937 and fit into the task force picture with the fast battle-wagons, carriers, heavy cruisers and destroyers. Other highlights of King's speech:

Fifty carriers of all types were in service by the end of 1942.

In the fall of 1942, only three fleet carriers were in service—the Saratoga, the Enterprise and the Ranger.

A large proportion of the Essex class carriers have joined the fleet. (Originally eleven of this type carrier were scheduled.)

Nearly all carriers of the Independence class (converted light cruisers) have been completed.

These ships are used as fast line carriers, although their place complement is much less than that of the Essex carriers.

A third type of fast carrier will displace 45,000 tons, with the heavier armament and much greater bomb and torpedo protection.

New Navy version of the Liberator, with more powerful submarine armament and greater offensive strength, soon will be available.

Carriers and the Midland are superior to anything the Japanese have.

Damage in the South Pacific air battles between carrier forces was far greater than admitted at the time because of security demands.

Woodrum Group Studies Army's Argument for Unified Air Force

Vice Admiral McCain to be one of principal witnesses appearing for Navy this week, when hearings are to be resumed.

By WILLIAM G. KEY

The Woodrum Committee on Post-War Military Policy that week was digesting Army recommendations for a staff department for the armed services and the first of Navy testimony asking that any decision be delayed until the recommendations of this country can be better determined, and until the lessons of the war can be better assimilated.

Acting Secretary of the Navy Forrestal appeared before the committee after it had heard Army witnesses, including Secretary of War Stimson, upon action before the end of the war, with final arrangements of the forces taking place within six months after the war.

Field Considerations—Forrestal asserted that the committee should have field considerations before recommending any steps, and particularly emphasized the air aspects of the problem. The case for a single air force remains to be proved, he said.

Observers suggested that the Army had gone too far in its presentation of views, and pointed out that the Woodrum committee, which is not a legislative committee, but will report its recommendations to the House and to the Military and Naval Affairs Committees—had expected the basic policy of not advancing changes until the commitments of

this country and the relationship of world powers could be determined following the date of the war.

The net result is that the deliberations of the committee have been shown as looking over detail, although the convictions of the committee generally were in favor of a single department for the armed services. Pending for immediate recommendations, advocating reconstruction of the governmental structure to greatly strengthen the hand of the professional military men, and demanding that only the broad principles of reconstruction be set down with fundamental detail left to the new organization to work out as it desired, the Army was in fact left the committee members and the Navy inclined to comment the matter in great detail.

Unified Services—It is known that Navy studies have leaned in the general direction of unified services, but it is only too patently obvious that the Army planners have gone far beyond anything that would meet with Navy approval under present circumstances, and probably far beyond anything that the Congress would sanction.

Vice Admiral McCain, deeply divided of naval opinion, himself will be one of the principal witnesses appearing for the Navy this

Russian Talks

State Department last week avoided the arrival of a Russian delegation for talks on post-war aviation with Joseph C. Grew, former ambassador to Japan and now chief of the Department's Far Eastern division, Chairman A. W. C. Page of Civil Aeronautics Board, and William A. M. Rendon, Assistant Secretary of Commerce.

Department spokesmen said the Russians accepted the invitation to consider some weeks ago and have been expected in Washington momentarily. There was an indication that the talks will take place when China has agreed to participate in similar discussions, but that for the Russian talks are the only ones scheduled.

week when the committee resumes its public hearings. Others who will testify are Ralph Bari, assistant Secretary of the Navy, who will discuss civilian manpower problems; Vice Admiral Herre, mobilization and post-war plans; Vice Admiral Jelenko, problems of naval manpower; and Louis G. Vandenberg of the Marine Corps.

McCain will present the case for Navy air, which under the Army reorganization plan would consist only of planes operated from aircraft carriers, submarines, and battleships. All land-based operations would come under the suggested Air Force. The Navy consistently has maintained that pilots operating with the Navy should be Navy-trained pilots completely familiar with naval operations.

The Navy maintains that it is not enough that the carrier pilots be Naval aviators, but that search pilots, long-range bomber pilots and special pilots should be qualified in naval operations. In other words, pilots and aircraft should be familiar with such items as ship recognition, fleet dispositions and naval tactics, surface vessel characteristics and potentialities.

Exemption—The Army maintained in testimony that Army, Navy and Marine Corps pilots have been functioning as a unified force in the South Pacific, yet the fact remains that the majority of naval strikes have had to be carried out by Navy and Marine pilots. The only great exception

was the destruction of a Japanese carrier in the Bonin Sea, carried out by Kenney's Southwest Pacific Army flyers, in which all surface vessels in action were Japanese.

The old question of strategic and tactical air groups appears to be the nub of the argument. Even committee members agreed to the Army views concede that strategic air operations should be conducted by one air arm, but they maintain, and the Navy maintains, that tactical forces must operate with their base service, land or sea, to meet adequately the defense needs of the country. And in operations as widespread as those in the Pacific, strategy and tactics are so many times closely intertwined.

Boeing Acquires DPC-Built Plant

\$7,100,819 reported paid for No. 2 plant at Seattle; constructed by government in 1940.

Boeing has completed purchase of the Plant No. 2 in Seattle from the Defense Plant Corp. and now owns its entire Seattle manufacturing unit with the exception of a few temporary buildings, and personnel building and "certain equipment."

The No. 2 unit is the production plant, and was built in 1940 by the government. The cost to Boeing was \$7,100,819, the annual report of P. G. W. Johnson, president of the company, reveals.

All Seattle Airport—Prior to the war-dictated building of the new plant, Boeing manufacturing was housed in Plant No. 1, now entirely devoted to engineering and research work. Plant No. 2 is at the Seattle municipal airport, Boeing Field, and is three miles from the original plant.

Gross sales of the company for 1943 rose from \$28,670,116 in 1942 to \$48,168,181. Net profits, however, dropped from \$5,307,624 in 1942 to \$4,412,076 in 1943. The net profit amounted to 14.3% of 13% of the gross sales, as against 11% for 1942.

Reserve Set Up—A reserve of \$2,800,000 for contract adjustment and expenses in connection with terminations was set up, following a policy started in 1941, while the 16 percent post-war reserve of excess stock issues was transferred to a reserve for development of post-war products and markets throughout the world.



MARTIN CREATES EMERGENCY OFFICE SPACE

PM-3 Martin built fighters no longer needed at the Glenn L. Martin plant in Baltimore have been flown over to provide badly needed office space for fusespeakers, industrial engineers, personnel counselors and clerical workers who were swamping work here being used for production work. By moving four floors where only sea is needed before, 32,480 square feet have been added to the Martin working area to be used in production of the Mars.

H. L. Dunn Elected To Lockheed Board

Harry L. Dunn, Los Angeles attorney and a Lockheed counsel for many years, last week was elected a director of Lockheed Aircraft Corp. All directors were unanimous in election at the annual stockholders meeting in Burbank.

Dunn fills a board vacancy created a year ago when Frank Russell, of New York City, resigned to give full attention to the post-war management of the National Aircraft War Production Council. Dunn played a prominent role in Lockheed's purchase of Pacific Finance Corp. and the late merger of Lockheed and Vega.

Advertisements—A conservative, national campaign of institutional advertising has been continued, to acquaint the public with the accomplishments of the company, its exceptional record in the development and production of aircraft and its ultimate applicability to future products.

Directors—Re-elected directors were: Robert E. Green, president; C. A. Barker, Jr., vice-president and treasurer; Cowland G. Green, vice-president and general manager; Carl B. Square, Cyril Chappell and Bill Hubbard, vice-presidents; Rudolph G. Walker, president of Aircraft Accessories Corp.; and G. Bradner, president of G. Bradner and Co.

Company officers re-elected unanimously by the board, other than officers serving on the board, include Mac Short and H. E. Raker, vice-presidents; L. W. Waldbauer, secretary; H. M. Campbell, Harold F. King, assistant treasurer, D. E. Browne, comptroller.



MARINER LANDS IN DRY LAKE:

For the second time recently a Martin Mariner boat landed on a sand spit in the Pacific Ocean. Making a cross-country trip to the Pacific, the P4M landed on the bed of a dry lake in the Arizona southlands when a motor failed. The plane was damaged and shipped out.

Sees Further Rise In Small Motors

WPA Group forecasts sharp increase in fractional horsepower types by mid-1949; summary of work in U.S. and war agencies.

By MARY PAULINE FERRY

A 25 percent production increase in large aircraft motors and a 17 percent increase in small aircraft motors are expected by the middle of 1949, a recent meeting of the WPA Fractional Horse Power Electric Motor Industry Advisory Committee estimated. Of the total demand for small motors, 10 percent will be for aircraft while 38 percent will be for radio and radar. According to data presented at the meeting, either requirements for 1948 are 10,000 to 10,000 motors a quarter for ABO replacements, 9,000 to 11,000 aircraft motors for both Army and Navy, and amphibians and Seabees at approximately the same rate as at present.

Plans for eventual conversion of the automobile industry to civilian production can not be formulated effectively without parallel discussions with the aircraft industry, the WPA Automobile Labor Advisory Committee decided at a meeting in Washington. Charles Wilson told them that after the defeat of Germany 35 percent of the automobile production capacity now tied up with war work will be available for peacetime production.

Wage incentive plans are accounting for an average increase in productive performance of 25 to 40 percent in regions where they have been adopted, WPA stated.

Aircraft Resources Control Office. War and Navy Departments and other related government departments are represented on the newly established "modified armament production agency council" located where War Manpower Commission has established a manpower planning committee, but a sub-designated armament planning agency but not been established. Any WPA industrial director may propose such a committee, whereas the regular agency committees are established upon direct authority from the WPA Production Executive Committee in Washington.

Although the Aluminum and Magnesium Division has announced a cut-back in virgin aluminum metal, production of other aluminum products, such as sheet, extrusions, castings and forgings, is not in danger of interruption, and sheet producers are having difficulty meeting schedules, due to manpower shortages, WPA said.

Operating Committee on Aircraft Motors. The committee has issued a bulletin advising that the use of media rubber sheets and other rubber sheets in aircraft applications must show such restriction as to the use of rubber sheets in aircraft applications. The committee has indicated that the use of rubber sheets in aircraft applications must show such restriction as to the use of rubber sheets in aircraft applications.

Monroe War Labor Board ruled. In denying an appeal by Boeing Aircraft Co. from a ruling of the United States District Court, the War Labor Board ruled that the company's refusal to employ a woman as a welder was not a violation of the War Relocation Authority Act. The board ruled that the company's refusal to employ a woman as a welder was not a violation of the War Relocation Authority Act.

Futures Trading

Pan American Airways, in a "hypothetical" time table dated July 15, 1948, told of fares and schedules to distant points that brought a response beyond expectations. In consequence, it has had to read apologetic notes to prospective travelers and reduce their money.

A PAA representative said about 5,000 of the folders were distributed, but "we're not printing any more." Many inquiries were received, and several used checks for reservations on first flights.

They were sent back with word that PAA didn't know just when planes would be available, but would keep the applicant's name on the list. The company was called to a line in five days at the bottom of the list that "we don't know when we can get a plane for you," and the company was called to a line in five days at the bottom of the list that "we don't know when we can get a plane for you."

In addition to "condensed flight schedules" and "pre-emptive fares," a special 3-day work and air route to Paris from New York was suggested, complete with helicopter transfer in both ends.

Paris to Rome was set at \$112.50 one way, \$203.50 round trip. The schedule listed two Paris express flights daily of 10 hours 15 minutes, and two 10 hours 50 minutes. Among 15 other points listed were London, Berlin, Rio de Janeiro, Moscow, Stockholm, Tokyo, Bombay, Sydney, Singapore and Hong Kong.

A PWL report in New York during a recent visit to the division is that the company had recently paid the labor union a \$100,000 settlement. The company had recently paid the labor union a \$100,000 settlement. The company had recently paid the labor union a \$100,000 settlement.

The report was issued by a change in the company's policy. The company had recently paid the labor union a \$100,000 settlement. The company had recently paid the labor union a \$100,000 settlement. The company had recently paid the labor union a \$100,000 settlement.

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Aerona to Retool For C-46 Contract

Contract for the Noorduyn UC-42 Husky cargo plane held by Aerona Aircraft Corp., Middletown, Conn., has been canceled and company will retool for sub-contract work on the Curtiss C-46 Commando. Work at Aerona will consist largely of C-46 tail structure to be supplied the Curtiss Wright plant at Buffalo and the Higgins plant in New Orleans, both of which are building the large twin-engine cargo plane.

A second cancellation in rapidly-changing conditions led to the second contract cancellation of the year for Aerona. Contract for the PT-19 was canceled in February and retooling for the UC-42 project was started. This work has now been stopped and retooling for the Commando work will start as soon as arrangements can be completed.

Capt. Charles O'Neil, AAF representative at Aerona, said the change was made because "overall conditions are changing so fast."



They wouldn't fly without them...



A battered toy monkey goes along on every flight of one serial gunner who, when we last heard from him, had personally cancelled five Zeros.

A champagne cork—memento of some very special evening—always hangs on the instrument panel of a sentimental co-pilot. It's helped to "pop" several jerrys.



A black Homburg hat, instead of a regulation helmet, always adorns the head of one of the hottest RAF fighter pilots in the business.



ETHYL is a grade mark name

Ethyl antiknock fluid goes along with every fighting plane powered by U. S. made gasoline. It goes into every gallon of fighting grade aviation fuel—and today more Ethyl is being used in each gallon than ever before.

ETHYL CORPORATION

Chrysler Building, New York City

Quarantine Revision Put Off Two Years

Pan American Conference of Health Directors delays action till Caracas meeting in 1946.

Hope for early modernization of aerial quarantine regulations in the Western Hemisphere was dashed in Washington last week when the Fifth Pan American Conference of National Directors of Health put off until 1946 revision of the International Aerial Navigation Sanitary Convention of 1933.

The conference, which meets every four years under Pan American Union auspices, alternates with the Pan American Sanitary Conference, which also meets at four-year intervals and is last held at Caracas, Venezuela, in 1940.

UNRRA Rules Future—The day before discussion of proposed revision of the Pan American quarantine regulations was to come up at last week's meeting, the United Nations Relief and Rehabilitation Administration was invited into the picture with criticism of proposed revisions of the 1933 Convention. They intimidated UNRRA as coordinating agency for the quarantine code and delineator of so-called yellow fever zones, and implied arrangements with the International Office of Public Sanitation.

The document caused a sensation. Dr. Juan de Barros Barrio, National Director of Health of Peru, told the conference it was his understanding that UNRRA was organized to administer occupied territories. So far as he knew, he said, none of the countries of the Western Hemisphere has been occupied.

Report to Be Submitted in 1946—Dr. G. L. Dunsen, chief of the United States Quarantine Division, deferred after two hours of discussion by the delegates that the proposed code that the proposed code was not the product of the Conference's Quarantine Committee, and could be torn up if desired.

Efforts were made to obtain passage of some sort of quarantine resolutions, but the Conference finally approved a resolution by Dr. Jules Thibaud, National Director of Health of Haiti, calling for a permanent commission to submit a final report to the Caracas conference two years hence.

IT Changes Recommended—The

commission will study a preliminary report by the Quarantine Committee, describing preparation of a modification draft by the UNRRA, and if necessary changes in quarantine regulations were recommended and will be sent to the commission's study.

They involve questions of expenditures for hospital facilities, adoption for international air travelers of a standard form of sanitary passport, responsibility for safety measures at airports, possibilities of necessary sanitary physical examinations, and examination of immigrants at ports of departure.

Protection Against Epidemics—In the meantime, as one delegate pointed out, each of the 21 American Republics will make its own quarantine rules. The possibility of an early end of the war, he said, and causing mass migration by air, imposes on each the duty to protect itself against epidemics, such as typhus, which might be brought in from Europe.

Two More Airlines To Stop at Topeka

Service by two additional airlines was given to Topeka, Kan., in a Civil Aeronautics Board decision making a total of three air carriers serving a city of 12,764 population.

The decision authorized Braniff to include Topeka as an intermediate point on AM 2 between Kansas City and Wichita. It also permitted TWA to use Topeka as an intermediate point between Wichita and Kansas City on its transcontinental AM 1.

Boeinger Withdraws—Continental, which serves Topeka on AM 60, was authorized to include Hutchinson, Kan., an intermediate point between Denver and Salina, Kan., on that route.

TWA was not permitted to serve Salina and Hutchinson as it had asked Hutchinson a now recurring service on Continental's AM 43.

Links Routes 49 and 45—Granting of Continental's requested stop pointing out a connection between Routes 80 and 43 at Hutchinson, and is expected to improve service between points on those routes.

In discussing Topeka, the Board said that where a city of importance is on or nearly on the existing route of an air carrier, sound transportation principles would indicate that service should be as-

sured "where such service can be provided without cost to the carrier, without financial burden to the government, without detriment to the carrier's existing service, and without undue impairment to service of any other carrier."

Greyhound Overruled—The Board overruled a memorandum by the Greyhound Corp. suggesting that the decision be temporary until a policy is established for local-trailer-pickup operations.

Ask CAB Ruling on Ryan, Braniff Cases

Two corporate relationships referred to Board for approval.

Two corporate relationships referred to CAB for approval cover ownership of Ryan School of Aeronautics by Ryan Aeronautical Corp., and transfer of the stock of Aerovot Braniff S. A. from T. E. Braniff to Braniff Airways.

Applications—Ryan School has applications for two overseas air routes and a California feeder line system already on file. Ryan Aeronautical Corp. manufactures Naval aircraft and aircraft parts.

The application seeks approval of this relationship, and says the planes to be used in the operation of the proposed airline will not be manufactured by Ryan.

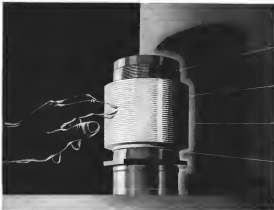
Braniff Stock Acquisition—In two other applications, the Board is asked to approve the acquisition of a majority of the stock of Aerovot Braniff S. A. by Braniff Airways. The stock is currently owned by T. E. Braniff, who also owns 34.12 percent of the outstanding stock of Braniff Airways.

In the first of these applications, an agreement by Braniff Airways for purchase of the Mexican stock from T. E. Braniff is submitted for CAB approval.

In the second, T. E. Braniff asks approval of his retention of control of Braniff Airways.

Conditions—He also asks that the second application be dismissed if the former is disapproved, inasmuch as he is not a "person connected with the company" under the meaning of Section 406 of the Civil Aeronautics Act.

Section 406 makes Board approval necessary "for any . . . person controlling an air carrier, or any person engaged in any other phase of aeronautics, to acquire control of any air carrier in any manner whatsoever."



Off Comes the Lid of Aircooled Engine Power

A new and outstanding engineering development has come out of Fairchild's laboratories—a unique type of aircraft engine cylinder barrel that will enable American warplanes to fly faster, faster, and higher than ever before.

Heretofore, the power output of aircooled engines has been limited by the cooling capacity of fins radiating from the steel of the cylinder block—or of aluminum alloy fins mainly placed on the cylinder barrel. The inefficiency of heat dissipation by these methods has long presented a problem for the best engineering minds of the world.

Now, by means of Fairchild's "Al-Fin" process*, a solution has been found. This revolutionary development makes it possible ultimately to bond pure aluminum fins to

the steel barrel to form an integral whole. The turbo-chamber bond provides the best conducting at the point of contact. As a result, engine heat is drawn off much faster than by the methods previously employed.

Range 1½ with "Al-Fin" cylinder barrels now produce more horsepower per pound of weight than other comparable engines.

The "Al-Fin" process is another example of the "touch of tomorrow" achieved by Fairchild engineering. A notable advance that helps build better warplanes today—no foremen of better civilian planes tomorrow.

*Al-Fin is the process now owned by Al-Fin Corporation, a wholly-owned subsidiary of Fairchild Engine and Airplane Corporation, and is available, under license, to others.

EST. U. S. WAR BONDS AND STAMPS

RANGER AIRCRAFT ENGINES

Division of Fairchild Engine and Airplane Corporation • Farmingdale, Long Island

Lightplane Leaders Discuss Design, Outlook at Detroit Meeting

Record crowd of about 400 gathers for session on post-war production and distribution problems sponsored by Institute of Aeronautical Sciences.

By ELAINE STUBBSFIELD

Despite low estimates from manufacturers on the post-war lightplane market, a record gathering of industry members at Detroit recently optimistically discussed design and distribution improve-

ments in preparation for a new era in personal flying.

About 390 participants were registered at the Detroit H. Ruder H. Educational Memorial, where sessions were made available

Technical Papers

Technical papers presented at the meeting of lightplane industry leaders in Detroit reflect widely across the industry and the firm or organization they represent.

"Oil Culture to Increase Content of Light Aircraft," Kenneth B. Turner, Bendix Aircraft Division, General Motors Products Corp.

"Structural and Design Problems of Light Aircraft," John A. Gaskill, Consolidated Vultee Aircraft Corp.

"Wing Plans in Light Aircraft Design," Maurice A. Gaskill, Consolidated Vultee Aircraft Corp.

"Regulatory Standards for Light Aircraft Design," Edward P. Wright, Civil Aeronautics Board.

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to the Institute of Aeronautical Sciences, sponsors of the convention. Officials said total attendance was about 400, some not having been registered. The program filled the society's afternoon and evening sessions of April 27 and 28.

Open-Minded Attitude—Most noticeable trend, on the platform, in floor discussions, and in the hallways, was an open-minded attitude toward almost any aviation proposal—technical or commercial. If any member felt that he had a personal airplane, he didn't mention it. All discussion indicated eagerness to try new designs, new devices, improved in-line plans as proposed.

Almost totally accepted among attending lightplane builders was the general proposition that present designs are seriously limited in utility. But the majority seemed determined to drive ahead with improvements on present designs rather than wait for a radical departure, namely rotary wing machines, to solve the problem. Nearly all commentators admitted that rotary wing and direct lift are highly desirable, but they thought the fixed wing type has advantages which could bring it out ahead, or holding its own. Several men said they believed the post-war market for personal planes will be much larger than the average estimate as of today.

Technical Papers—In all, 32 technical papers were presented by officials and engineers of aircraft manufacturing companies, universities, and of the Civil Aeronautics Authority.

The engineering quality of the papers, which were selected by the Institute committee for the society, was generally high. A few offerings were criticized privately as being verbal advertisements for the speakers' products. This was especially true of the papers on the design of a personal airplane, which were presented by a number of manufacturers.

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The needed but not, of course, reveal all important engineering progress of the various manufacturers. Development of the post-war plans advantages are being kept behind locked doors. Many of these are the by-products of war production, some are the work of a few engineers who can be spared from war work, now that many military designs have reached a settled stage, some of course are merely bright ideas on paper or in somebody's head.

Design competition is very keen, and with good reason. The shake-down period, like the one in the early years of this century that made military items of a majority of aircraft manufacturers. It is hard to say if they will try their luck and their skill, but only a few, with superior design and sound financing and distribution, or more than their share of luck, will survive.

Helicopter Film Show—There were no exhibits at the convention, except a couple of films brought along to illustrate talks. An event of major interest was the showing of a motion picture of the Bell helicopter. The subject is controversial, but observers and the Bell machine incorporates important departures from basic helicopter design. One operational improvement, it was said, is simplification of control which promises to shorten the necessary training period by a wide margin. Arthur M. Young, who heads the Bell development, was referred to as a youngster of extraordinary ability, who was pointed out that Bell now has to its credit three pioneering ventures: the on-center-of-gravity-engine lighter design (in the P-42), the jet-powered gyroplane (P-43), and now its helicopter.

The meeting was the first strictly lightplane gathering sponsored by the Institute of Aeronautical Sciences. Spokesmen for the Institute and they were pleased with the results. They said they had no plans, at this time, for another one exclusively for lightplane builders, but that doesn't mean they won't have. They entered the venue that the lightplane industry will be represented in future meetings.

Chairmen of the four convention sessions, afterwards and evenings of the two days were, respectively: Peter Altmann, consulting engineer; James W. Kamp, chief of research division, Consolidated Vultee; William B. Reed, chief of research division, Consolidated Vultee; and Arnold Kistner, University of Michigan.



GE GASKET SHAVER:

Shaving parts in one smooth, continuous cut, this ingenious shaver was built from scrap parts at the General Electric Works in Springfield. The cutting blade is a broken die ground to razor sharpness. The pressure used is the only manual part used, being made to conform to the shape of the gasket material. The shavings make possible cuts of varying thicknesses. In operation, one end of the part is placed on the cutter, held in place with the pressure wheel and pulled forward.

Armorably Developed From Plywood, Metal

Small hangars may be quickly and easily constructed with a new material produced by U. S. Plywood Corp.

The company recently announced a revolutionary new technique of construction utilizing factory-fabricated plywood-plastic wall panels which retain the outstanding properties of each material.

Plywood and Metal—The material, known as "Armorply," combines plywood and light metal of paper thickness with a plastic adhesive.

Structures built by this system have 30 percent less dead load, save the one material takes the place of framing, sheathing and exterior siding and roofing. A 20' x 40' Army barracks built in a test at the material required only 2' x 7' x 11/2" shipping space, the company revealed.

Canada Reports Pilot Surplus

Canada has trained its 100,000th air crew member for the RAF and RCAF under the British Commonwealth Air Training plan, it is on the schedule announced in the House of Commons at Ottawa recently by Air Minister C. G. Power.

Power said that the 100,000 mark would be reached by the end of April. The year of 1945, in which produced 38,900 aircraft in 1943, is expected to produce 46,000 this year.

1944 Needs Filled—"We have all the men we need for 1944," Power said. "And with what is produced in 1944, we shall have the men required for 1945. With the backing of the aeronautical, we shall have all the men required for 1946."

At present there is a surplus of pilots, he said, which explains the closing of this year of 1945. This was not a large problem, however, three having been 154 schools at peak period a few months ago, and the air training plan is to keep on for the allotted period after 1945.

Canada to Pay U. S. For Airport Outlay

Canada is to pay the United States for all improvements made on Duranton airfield by the United States, according to Finance Minister J. L. Lacey.

The Dominion announced some weeks ago that it would pay the United States \$54,000,000 for improvements and installations on the Alaska Airway, including Staggan Route and related air routes in northwestern Canada.

Includes All Fields—Lacey says the same plan will apply to all other airfields, some of which are on account of the United States for its airman in Canada.

CAA to Shut Down 24 Control Towers

Operation of 24 airport traffic control towers by the Civil Aeronautics Administration will terminate June 23 because the Army no longer requires them.

CAA now operates 115 towers, including the 24 to be terminated. The latter are at Alton, Arizona; Bette Creek, Burlington, Wt.; Chattanooga, Dover, D'Almeida, Idaho; Dugout, Calif.; Des Moines, Helena, Mont.; Houston, Indianapolis, Kansas City, Mo.; Louisville, Mo.; New Orleans; Niagara Falls, N.Y.; Ogdon, Utah; Omaha, Philadelphia, Poestlin, Idaho; St. Paul, Sarnes, and Yakima, Wash.



PRESS and the Inspection Door Flies Open

As much as 30 minutes is saved in the inspection of a single plane by the new Hartwell inspection door latch. That means planes in action faster!



APPROVED BY ARMY AIR FORCES



Part No. H4028
Patent applied for

The new Hartwell inspection door latch cuts the slow, tedious removal and replacement of inspection doors. Simple and rugged in construction, it contains four parts—trigger and bolt, made of light gauge steel, stainless brackets, and twin springs (two are used for safety). It is light—weighs less than 16 oz.; rivets in the inspection door, and it fits flush!

From the trigger of the Hartwell latch and the inspection door pops open! Press the bolt and it is locked shut! Two or more latches may be used on a single door, if desired. The inspection time-saver can be installed in a standard Army Air Force cutout, shown on print 45G8863.

New flush hinges. Available with the new Hartwell inspection door latch is the new flush hinge. It is light and durable. Holds the inspection door to 30 degrees of full opening when it is released by latch. For complete engineering details about latch and hinge write or wire our Los Angeles office.

Single source for 778 different aircraft
production parts and tools

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2417 GARDENIA BLVD., LOS ANGELES 16, CALIF.
DALLAS, TEX. DETROIT, MICH. KANSAS CITY, MO.

THE AIR WAR

COMMENTARY

New Improvements Give Allied Tactical Planes Important Edge

Increased speed and firepower, standrop canopy, "para-frags" and development of fighter-bomber important factors in invasion raids

The most commonly discussed quality in a fighter is speed. People are always asking what is the fastest airplane? Is it the Mustang or latest Spitfire? The Thunderbolt or Typhoon? The Lightning or newest Messerschmitt 109? On the whole this popular instant is correct, and has the potential on-the-spot backing indicated by a typical remark tossed off by *Lieut. Gen. "Toots" Spaatz* shortly after the formation of the Northwest African Air Force, last spring. Speaking of the Lockheed Lightning he said, "I'd rather have a plane such as the P-38 which can go like hell, even if it does have a few bumps the better with it, than one which can't go like hell, with a few things the matter with it."

Other Qualities Important.—Given speed, however, a dozen other factors will be mutually raised by top fighter pilots in any air force (the order may vary). High rate of climb and good maneuverability will be well up on any list, followed by heavy firepower, adequate armor, good visibility, hardness of instruments, ruggedness, ease of service, long range (for escort fighters) and good diving qualities and bomb load (the fighter-bomber). As the fundamental role of the bomber softens, and will continue to the end, the versatile fighter is coming into its own as one of the war's key tactical weapons.

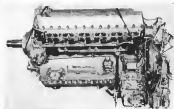
That "Standrop" Canopy.—Here is the newest contribution to good visibility. The Germans seem to have brought it out first, on a late model of the Focke-Wulf 109 fighter, although similar developments were going forward in Britain and the United States. The newest series of the Hawker

Typhoon Mk IIb came out with a "bubble" last year, and some of the latest model Spitfires are similarly equipped.

In this country the newest mod-

elation of the Mustang has a completely redesigned "hooding" cockpit canopy giving the pilot excellent visibility in all directions. It is quite likely that improved models of other American fighters, both Army and Navy, may shortly appear with this feature. The material used is a phenolic, resinous material something like Plexiglas, and is bullet-resistant, though not fully bullet-proof, owing to weight considerations. On the Mustang the enclosure can be rolled back hydraulically as an aid in night flying, and whether rolled back or not, this new type of canopy on all fighters in the United States has proved greatly superior for night work over the conventional type.

Bomb-Carrying P-Shooters.—One of the most remarkable tactical developments of the war is the fighter-bomber. Coming in low



POWER PLANT OF NEW SPITFIRE

Shown are three views of the Pratt & Whitney "Griffon" engine which powers the new British Spitfire, the Mark XII, recently announced by the Ministry of Aircraft Production.

and fast over the tree-tops the maximum amount of surprise can be achieved. Using regular bombs, or better, delayed action or parachute-bombs ("para-frags"), accurate hits are obtained, and our ship is a fighter again with all the speed, fire-power and maneuverability it requires to fight its way back to base. Sometimes the 50-caliber gun or cannon fits in a snafu job which cannot be much or more (except than the bombs) (The Navy, Navy, Monoplane and Lightning have 30-mm cannons, Stormcenter have 40-mm, Javelin 30-mm, and Hurricane 30-mm, and the Navy's 40-mm cannon, latest version's lighter-bombs have 15-, 20- and 30-mm rapid-fire cannons, with reports of 40-mm. on the newest of all.) Compared with the "Humbombers" of the early fighting in the Ladoe desert with their 250-pounders, and the initial use of the P-40s in the first stages of the Pacific air warfare, the present bombloaders are fantastic.

The later World War in China and in India led the way toward this advance by dropping half 500-pounders, and then in the fight to strike enemy communications in Burma 1,000-pound "bridge-busters." The Marine-powered Mustang can take a couple of 500-pounders (or heavier), and the powerful Thunderbolt carries two 1,000-pound bombs for short-distance. The beauty of the Thunderbolt (four 30-mm cannons) should be able to do the same. The two-engine Lightning has a longer range than other fighter-bombers, with its much interchangeable combinations of 500- or 1,000-pound bombs and fuel tanks, an American equivalent to the versatile Mustang, but striking in daylight. Its opposite ended in the Luftwaffe as the ME-109. All these Allied fighter-bombers, as well as the new clipped-wing low-level Skyraider, are now carrying out a terrific program of secret missions and fighter sweeps—high level, low level, dive-bombing, strafing—against enemy communications and other objectives to the tune of 2 or 3 per day, with relief pilots for the second or third shifts in the days and weeks ahead, this will mount up to a crescendo of tactical air power such as the world has never seen.

Increased Radius of Action—Rapid strides have been made to adapt the 1943 crop of fighters as either "long range" fighters for escort work or as fighter-bombers



KNOX

to increase their radius of action. Since last summer, increasingly large drop bombs have been used by Allied and enemy fighters, the latter to insure staying power to attack crippled Fortresses and Liberators and their escorting fighters on the homeward journey. In addition to this, greater built-in loadings has increased the basic range of improved models of the Thunderbolt, Lightning and Mustang. As the lines are pushed back, this extra couple of hundred miles radius of action will be a priceless benefit. Navigation

Test Pilots Ritchie, Wey Die in Crash

Wright Field's roll of test pilots who gave their lives in flight testing new army aviation developments, saw two new names added with the deaths of Maj. Perry J. Ritchie, 21, Dayton, and 1st Lt. W. R. Wey, 24, Edwards, Ark., at Los Angeles, municipal airport, Apr. 24, in the crash of a B-25 bomber which they were test flying.

The roll includes Barleide, Elmerford, Woodruff, McChesley, in addition to a number of lesser known pilots.

Billie Halden of DFC—Major Ritchie, recognized as one of the most expert Materiel Command pilots, had only recently returned to flying status, after suffering a back injury last summer when parachuting from a burning fighter plane he had been testing at extreme altitude, near Wright Field. He was awarded the Distinguished Flying Cross last December.

Navy Air Arm Built To Peak Under Knox

Lee E. Knox was most astounded member of Roosevelt's Cabinet.

Since July 11, 1940, when the late Frank Knox took the oath of office of Secretary of the Navy, Naval aviation has risen from a small segment of the U. S. Navy to a vital part of our ocean defenses. As the highest tribute he could pay aviation, Secretary Knox established the position of Deputy Chief of Naval Operations for Air and appointed Vice Admiral John S. McCain as deputy for Admiral Ernest King, commander in chief.

Secretary Knox died Apr. 23, 1944, at a heart attack. The most astounded observer, Knox had flown an estimated 500,000 air miles since he took office. On his log are recorded two round trips to Pearl Harbor, approximately 38,000 miles in the Douglas C-47, and 28,000 miles in the Pacific. He traveled by plane throughout this country also.

Built Up Navy Air Strength—When Knox took over the top Navy position, the total Navy strength in planes was 5,113 of all types, while at his death the Navy had 42,900 aircraft, including more than 38,000 combat planes. Under his guidance the service's carrier strength has risen from 4 to 16, with 16 carriers including baby flat tops.

A gigantic training program of Naval aviators, to match the growth in air strength, was launched by Knox's Navy and tremendous training fields at Corpus Christi, Tex., Jacksonville, Fla., and Pensacola, Fla., were built and placed in full operation. Corpus Christi is the site of the largest Naval Air Training Station in the world.

Plane Compass Used On Invasion Craft

The mapmaker's compass reading compass used on fighter planes has been adapted for use aboard invasion landing craft, Bendix Aviation Corp. has announced. The compass weighs less than five pounds and is used in the split-second timing and accurate ballistics of landing parties necessary in invasion operations.

PERSONNEL

Erle G. John M. Glick, commanding general Middlebrook, Pa., Air Depot, Air Service Command was named the Legion of Merit because he "conceived, planned and developed mobile repair units designed to bring repair facilities to easily landed aircraft, thereby effecting a saving of two-thirds man-operational time. His conception, oversight organization, and capable direction of this plan resulted in the return to operation of 42 low-engine bombers not otherwise repairable."

George W. Goble, Jr. has been elected a director of National Airlines, Inc.

He is treasurer and general manager of Goble Inc., Jacksonville, Fla., vice-president and director of Gulf Atlantic Transportation Co., vice-president of Goble and Harwood, Miami, and vice-president of Construction Co.

T. C. Sullivan has been named assistant to the president of United Aircraft Corp. Sullivan was an aviation writer for the Wall Street Journal and later joined United Aircraft Co. as assistant to the president and secretary of the corporation. He is well known in the aviation writing field.

Robert A. New (photo), assistant to the manager of the Atlantic Division, Pan American Airways, has been named district manager for the United Kingdom and West India headquarters in London. At the same time he was assigned to the Jacksonville, Fla., district traffic manager and senior representative of the office in England, was being transferred there after two years abroad and later will be assigned to elevated headquarters at La Guardia Field, N. Y. Rao has served Pan American at Wake Island, Manila, Singapore, India, Africa and Bermuda.



MAPS POST-WAR OUTPUT

Col. Philip J. Kelly, managing director of the Associated Merchandising Corp., has been named by Aviation Corp. to head a division of the corporation's planned post-war production of Aerialist appliances.



Col. Howard A. Rank chief of the AAF Convalescent and Training Branch, who presented with one of the B-26B Public Affairs and Taylor Design awards for "out-

standing service," awarded to Pennsylvania-Central Airlines President.

C. Robert Moore, has been elected secretary of the airline. Moore has been with PUA since 1935 and has served as assistant secretary, assistant to the executive vice-president and assistant district traffic manager at Pittsburgh.

M. J. Brown has been named assistant to the Treasurer of Chicago and Southern Air Lines. His former position as chief accountant has been filled by J. H. Quinn. Joe Russell, personnel technician for Chicago and Southern has become supervisor of disbursements, replacing Michael Jackson, who has resigned.

Mr. Gen. William O. Butler has assumed command of the AAF Radio Flying Command, with headquarters at Maxwell Field, Ala. He is replacing Maj. Gen. Thomas J. Hughes, Jr., whose new assignment has not been announced.

Gen. Col. Howard A. Rank chief of the AAF Convalescent and Training Branch, who presented with one of the B-26B Public Affairs and Taylor Design awards for "out-



CELEBRATES 49 YEARS OF NAVY SERVICE

Following 49 years in the Navy, Vice Admiral Henry Vernon Butler (left) was presented with an all-purpose U. S. aircraft carrier during his tour. Mrs. Butler, (center) co-ordinator assistant to Admiral Butler, and Col. Miles R. Truesdale, USMC, grant marshal (right), presented the pinning. Admiral Butler has held command of Aircraft Squadrons of the Battle Fleet, Aircraft, Battle Force, and many other important commands. He recently celebrated his 75th birthday.

Trail Blazing in the Skies

PIONEERING NEW METHODS



HOW GOODYEAR AIRCRAFT CORPORATION SERVES THE AIRCRAFT INDUSTRY

1. By constructing subassemblies to manufacturers' specifications.
2. By designing parts for all types of airplanes.
3. By re-engineering parts for mass production.
4. By building complete airplanes and airships.
5. By extending the facilities of Goodyear Research to aid the solution of any design or engineering problem.

NEW PRECISION IN MEASURING CABLE TENSIONS—Illustrative of Goodyear Aircraft Corporation's thoroughness in every phase of airplane construction is the development of the position cable-tension indicator. This highly accurate instrument, built by Goodyear, measures the exact tension on airship and airplane control cables, giving an instant reading correct to the pound. With this device the cable does not have to be disconnected, making it possible to determine tensions precisely after installation. Many of these instruments are now being used by the air services.

BUILDING PROVEN AIRCRAFT



THE RELIABLE P-40 WARHAWK is one of America's famous warplanes built in part by Goodyear Aircraft. Several thousand P-40's have flown into action with stabilizers that came from Goodyear assembly lines. Goodyear is proud that its long experience in aviation has contributed materially to the swiftness of this rugged fighter—only one of many equipped with Goodyear-built wings, empennages, flaps, ailerons and numerous other components. Goodyear also builds complete airplanes and airships for the Navy.

BUY
WAR BONDS
BUY
FOR KEEPS



GOOD YEAR
AIRCRAFT

standing contributions in the field of solidification through a program following the Army's theory that the body activity rather than lack of it has definite therapeutic value."

Colonel Bush was formerly an instructor of medicine at St. Louis University and Associate Chief of Staff at St. Luke's Hospital.

Frank C. Ives, superintendent of communications for **Bentley Airways** at Dallas, will assume charge of preparations for the operation of **Aerovias Bentley**, a new airline in Mexico. He will supervise training, installation of equipment, selection of personnel, and development of operations to carry out the program.

Robert D. Watson, administrative assistant to the chief engineer of **Northwest Airlines**, has been appointed assistant to the general traffic manager. An administrative assistant to **Karl O. Larson**, he completed important traffic and operations data used by the airline in support of its application for a New York extension recently heard by the CAB.

F. B. Sparhawk, executive engineer of **Douglas Aircraft Co., Inc.**, was named National chairman of the Air-



GETS SERVICE PIN:

Carl P. Schorpy, service manager of **Maxwell Standard Propellers Division** of **United Aircraft Corp.**, received his 15-year pin from General Manager **John A. Stenrood**. Before starting with **Maxwell Aero Mfg. Co.** in 1928, he served as secretary of the nearest committees of the **National Aeronautical Association** in Washington.



Sparhawk

worthless Requirements Committee of the **Aeronautical Chamber of Commerce of America** at the annual meeting of the Committee of St. Louis.

John W. White has been elected president and general manager of the **Westinghouse Electric International Co.** **William H. Kass**, formerly assistant general manager, has been elected vice-president, replacing **Walter George H. Bush**, president of the **Westinghouse Electric and Manufacturing Co.**, becomes chairman of the Board of the **International Co.**

J. R. Tinsdale, until recently an special leave of absence from **Bell Telephone Laboratories** in Columbia University's War Research division, has taken over coordination and production programming of thermistors, resistors, photoelectric switches and carbon-deposited resistors in the radio division of **Western Electric Co.**

Lee J. Robison has been appointed sub-director in charge for **Industrial and Public Relations** at the **Douglas Aircraft Oklahoma City plant**. He has been assistant to the vice-president of **Citizens Service Gas Co.** and served four years as vice-president of the Chamber of Commerce of Oklahoma.

G. J. Ives is the new superintendent of maintenance for **Delta Air Lines**.



President Roosevelt has nominated **May C. Lane H. Bennett**, chief standing general of the **North Air Force**, and **May C. Lane H. Bennett**, Chief of Air Staff, to be temporary trustees of the **United States Bank of Oklahoma**, corresponding general of the **North Air Force**. **Colonel Bennett**, has been nominated for major general.



Bennett

Dr. Laurence C. Hark (left) has been appointed vice-president of research and associate director of research at **Boeing Aircraft Co.**



NEW ATC PRESS CHIEF:

Lt. Col. John C. Henry has been appointed special assistant to the Commanding General of the **Air Transport Command**, succeeding **Lt. Col. Rex Smith**. The function of his office is public relations for the ATC. **Colonel Henry**, formerly **White House** correspondent for the **Washington Star**, has seen operations of the ATC all over the world. Before his present assignment he served on staff to **Gen. George H. B. Smith** and accompanied him on special missions. **Colonel Henry** was recalled to the ATC on April 3 and assigned to **Gen. Harold George**. He has been on active duty since June 1942.

AIRCRAFT PRODUCTION

Chamber Asks Speedy Action On Competitive World Airlines

Final draft of declaration drawn up by top manufacturing officials at the Los Angeles meeting calls for expansion of air commerce.

Expansion of operations of domestic airlines before the end of the war, immediate extension of international air commerce, re-establishment of the Office of Assistant Secretary of Commerce for Air, competition in commercial air transport and maintenance of a sound aircraft industry by the U.S. as a dominant air power constitute the basic policy of the Aeronautical Chamber of Commerce.

Adopted at its Los Angeles meeting, the policy declaration in its final form warns against stripping aircraft plants of young engineers, pointing out that technological superiority must be maintained, and cautions the government that its responsibility in contract terminations requires that it must meet all costs, including operation wages, since the magnitude of expansion makes the industry vulnerable.

Sound Surplus Program—The Chamber also calls for a sound surplus plan policy: use of surplus planes only through well set and existing demand for surplus equipment, but improper use could destroy the manufacturing industry.

Military and Naval plans, the statement of policy declares, avoid approximate future requirements for several reasonable assumptions, and knowledge of these would avoid private companies in their planning. At the same time, the declaration expresses gratification at the steps being taken in the matter of government-owned facilities, saying the private aircraft industry could not survive government competition.

More Domestic Service—Calling for increased operation of domestic airlines, the Chamber urges this as a means of relieving overburdened surface transport and speeding the conduct of war business. Expansion of international air transport should be taken in hand "as an immediate contribution to

the war effort and a wise provision for future needs." Expansion of air mail offers a profitable method, says the statement.

Air Executive Department—Placing responsibility for commercial air transport in an executive department is asked, with the State, War and Navy Departments collaborating with the department charged with commercial responsibility in operation of an American airway policy. In this connection, the Chamber urges that the Office of Assistant Secretary of Commerce for Air be re-established.

Competition in commercial air transport is essential to technical progress, the Chamber declared.

U. S. Can Compete—Stating those who maintain that the United

States cannot compete with other airlines in aviation, the Chamber points out that "The self-reliant young American aircraft industry, maintaining a high level of wages and salaries, was able to undercut all foreign competition even though some of this was subsidized."

Citing the experience of the country that "Our people have been persuaded that expenditures in preparation for war are out-of-pocket expense," the Chamber declares that "From the economic point of view, we could credit the aircraft profit back against the cost of military and Naval aircraft . . . but a strict accounting isn't necessary to prove that providing for the common security is not necessarily a burden upon the people. Done through private industry, it can be an investment."

Summary—Summarizing, the Chamber stated that "International domestic and private air transport offer a source of new wealth and employment. Rapid development is dependent upon improved technology stemming from a strong competitive manufacturing industry. A dominant military and Naval air force supported by air bases is a prerequisite of communication by land, sea and air. Only an air-minded people can provide that controlling airpower which, in the hands of free men, is the hope of lasting peace and prosperity."



DOUGLAS SKYTRAINS FOR INVASION:

C-47 transports have been rolling off Douglas assembly lines in increasing numbers during the past few months to meet demands for extra planes for the AAF. Three thousand of these planes had been built up to early February. Domestic airlines have been restricted to 393 planes of similar and smaller types, had fewer than 400 of these planes and were here to get back some more than the Army after Pearl Harbor and possibly some of the new crop. Invasion results may determine whether or not the airlines will get this badly needed equipment.

C-W Plant Doubles Helldiver Output

Columbus ends his stride after long struggle with design changes and assembly line problems.

The much-criticized Columbus, O., plant of Curtiss-Wright Corp. has more than doubled production in the past six months. The plant has been building Helldivers, an advanced dive-bomber model with which considerable difficulty was encountered and finally mastered. The model now being produced is the SH2C-3, embodying major changes from the SH2C-1 first put into production at the plant.

Powered By Cyclone—The Helldiver now is powered by a Wright Cyclone turning up substantially more horsepower than the 1,700 hp. Wrights used in the first models. A four-blade constant-speed, full-feathering propeller has replaced the three-blade propeller used on the SH2C-1.

Helldivers have been in action since last November, when they were introduced to the Japanese at Rabaul. Since then they have been in all major actions of the front.

Output Increased—Production has been on the upgrade since last October, when 103 percent of the schedule was met. In November, production was 125 percent, in December, 111 percent; in January, 126 percent, and in February, 133 percent. Schedules were increased for March, and the quota met and passed by one percent.

The seven-ton Helldiver was rushed into production after Pearl Harbor and, being a highly ad-

vanced type of ship, many difficulties were encountered in bringing it to combat ability. The prototype crashed in tests, and the first models were brought out before extensive flight tests could be made. The plane is considered one of the most complicated types ever built.

Truman Inquiry—Production at the plant was the subject of a Truman committee investigation last year, just about the time the plant was ready to go into production of the improved plane. Production was low because of assembly line and design difficulties and changes, but took a sharp upturn when improvements to the line were completed and when new assembly line feeding methods were introduced by E. J. Harrington, former vice-president of Lockheed Aircraft Corp., who had been elected a vice-president of Curtiss-Wright in charge of materials. His material control plan eliminates parts shortages on the assembly line and permits full-efficient use of parts manufacturing equipment.

Less than 10 percent of the workers in the plant had previous aircraft construction experience, and a vast schooling program was one of the first projects.

New Brake Machine

A new aircraft brake drum turning machine which its developers say has been designed to meet the specific needs of military aircraft maintenance, is being offered by Leeson Products Inc., of Bedford, Ohio. Makers of the machine say the barrel can be rotated in thirty seconds to change over from turning to grinding.

Sikorsky Develops 2 New Helicopters

Sikorsky Aircraft has developed two new helicopters of increased size and carrying power "which will go into production during the year," Frederick B. Bentschler, chairman of the board of United Aircraft Corp., told stockholders at their annual meeting in East Hartford, Conn., recently.

16-Passenger Model—Sikorsky has been working on a helicopter designed to carry a maximum of 14 passengers, and it is believed to be this helicopter that Greyhound Bus Corp. had in mind when representatives told the CAB at its recent feeder line hearings that the bus company would put all its faith in helicopters for post-war passenger service.

Bentschler also told stockholders the 1944 output of engines, propellers and aircraft designed by the corporation probably would be the greatest in its history.

Goodyear to Make P-38 Tail Surfaces

Goodyear, now turning out Corsairs and blimps for the Navy, will make twin tail surfaces for the P-38 Lightning fighters.

The company, long a producer of wheels and brakes for many types of planes, has been making parts for the Grumman Hellcats, Martin P4M's and other fighting craft, while the parent company, Goodyear Tire & Rubber, has been producing airplane tires, ballast and fuel tanks, fuel hose and other rubber parts for aircraft.

BUT WILL IT FLY?



Put the amount of a tank on a gas in the back power of a tank, and it up into the atmosphere and give it power to outstrip anything that flies. That, in essence, was the kind of airplane the A.A.T. Model Command needed... and wanted Republic to build.

On paper, the P-43 Thunderbolt looked formidable—over 100 and a half tons of the most concentrated and fighting power ever designed. Certainly, anyone would have been forgiven for saying: "But will it fly?"

The answer has been dramatically written by Thunderbolt pilot in every theater of war. It is corroborated by real in the papers where Thunderbolt pilots are being the stamp by scores of up to 7 to 1. Thunderbolt performance is, indeed, one of the rare attributes of this war... thanks in great part to the men

who fly them. And Thunderbolt production is another remarkable achievement. In eleven months from the word "go", the P-43 was designed, engineered, developed, fabricated... and flown!

Republic has been consistently breaking aircraft production records ever since 1933 despite the fact that its engineers are busy remodeling the Thunderbolt to meet the latest needs of combat. It is ever and always a new airplane. But because of Republic's uniquely flexible production system, there is never a halt in the flow of Thunderbolts to our fighting men.

Republic Aircraft Corporation, Farmingdale, Long Island, New York, and Trenton, Indiana.

Republic first in war
point to first in peace



REPUBLIC AVIATION CORPORATION

Specialists in High-speed, High-altitude Aircraft



New SH2C Curtiss Navy "Helldiver". The 23 test pilots of the Columbus, Ohio, plant of Curtiss-Wright Corp. Allplane Division line up on the wings of the new Helldiver, which is equipped with an even more

powerful Wright Cyclone engine and a new Curtiss Electric constant-speed, full-feathering type propeller, with four six-foot hollow steel blades. The Helldiver has proved itself in the Pacific

Fighters May Get New Oxygen Tanks

Automatic Units, used on bombers, are regulated by barometric pressure.

Tests now being conducted may result in fighter plane installation of automatic oxygen metering equipment that for the past twelve months has assured American bomber crews of an accurately measured oxygen supply at all altitudes.

Complete freedom to concentrate on flying and fighting, without the added worry of controlling oxygen supply, is the objective described to gas engineers in Los Angeles recently by R. M. Connor, director of the American Gas Association Testing Laboratories.

Automatic Regulator—He displayed a nine-ounce oxygen flow regulator that is wholly automatic, its operation controlled by barometric pressure, and used 20,000 units already have been installed in American bombers. Experimental installations in fighter planes were prompted by the discovery of similar equipment in a Messerschmitt brought to Wright Field four months ago, he said.

In the bomber installation, the regulator commences oxygen flow at 10,000 feet, delivering 85 cubic inches per man per minute, and steadily increases the flow to 150 cubic inches per man per minute at 30,000 feet.

Used in Hospital Phones—A similarly light-weight regulator that can be operated from ground level is up to have been developed for installation in hospital planes, in which some patients may need immediate oxygen treatment.

Connor credited W. B. Teller, chief engineer of the A.G.A. Laboratories' War Products Department, and E. G. Hoffman, president of Alar Products, Inc., as leaders in the development of the device.

Gas Turbine Engine For Planes Discussed

The gas turbine engine may provide aircraft engines with ratings between 2,000 and 5,000 hp., Kenneth Salisbury, of General Electric's turbine engineering department, told members of the ASEE and gas power divisions at the national meeting at Tulsa.

Salisbury warned, however, that the gas turbine at its present stage of development does not afford good fuel economy and that it has other drawbacks that must be overcome before it can be put in general use.

Use in Aircraft—Remodeling possible aircraft use, Salisbury said that "the lightweight internal combustion engine seems to be approaching a rather definite limit" on output. The gas turbine, on the other hand, just comes into its own in the sense at which the gasoline engine seems to be approaching a limit.

SAE War Material Meeting Scheduled

Adaptations of aircraft-type structures to ground vehicles will be discussed before the National War Material Meeting of the Society of Automotive Engineers in Detroit, early in June, by Mac Short, engineering vice-president of Lockheed Aircraft Corp. Sessions will be held at the Book-Cadillac Hotel, Detroit, June 5, 6, and 7.

Relationship between practical ground-war cars and aviation will be discussed by Consolidated Aircraft's W. B. Stout and by Brooks Stevens, Milwaukee industrial designer.

Production Methods—Of further interest to aviation engineers will be discussions by M. M. Halton, of Wright Aeronautical Corp., on the subject of aircraft engine production methods and W. G. Norris, of the Wilson-Rohr division of Raco Manufacturing Co., on lessons learned from aircraft engines applied to heavy-duty ground-vehicle engines.

Glass-Reinforced Fuselage Tested

Plastic and said to be 30 percent stronger than metal and 50 percent stronger than wood.

An Army basic trainer, equipped with a glass-reinforced plastic fuselage, side panels and tail cone, has been successfully flight tested at Wright Field, Dayton-Corning Fiberglass Corp. reports.

The fuselage is estimated to be 30 percent stronger than a metal fuselage on a strength-weight basis and 45 percent stronger than the wooden fuselage now being used. Firing tests indicated the glass-reinforced fuselage would be satisfactory under static. High explosive projectiles failed to penetrate because of the low density of the material, which did not flow.

Has Balsa Wood Core—The experimental fuselage consists of a balsa wood core between an inner and outer skin of plastic reinforced with fibrous glass cloth.

Further experiments may prove the new plastic practical for production processes and answer the need for a high-strength, lightweight plastic material that can be molded into intricate shapes without high pressures, high temperatures or expensive molds.



INDIA TAKES DELIVERY ON DIVE BOMBERS:

This camel-drawn cart probably got more attention from American troops than the striped Vengeance dive bombers in the background. The planes, built at Consolidated Vultair's Nashville plant, are loaded

through the streets of an Indian city after being unloaded from freighters. They are en route to a base for storage and combat against the Japs in Burma.

Martin Employee Designs Chip Saver

An ingenious compressed air attachment that saves the labor of one man at extrusion milling machines and segregates scrap is be-

ing used at the Glenn L. Martin plant in Baltimore to remove chips from the milling machines.

The equipment was designed as a result of company suggestions, and consists of two sets of air directed on each side of the cutter to carry chips into a duct and from

the duct into a portable receptacle. Martin officials say the attachment keeps chips from the floor and keeps them from being contaminated with dirt or chips from other kinds of metal.

Navy Patrol Bombers Use New Type Heater

Navy patrol bombers and the great Army transports are being equipped with a new combustion-type aircraft heater burning gasoline from the plane's tanks, according to the Heating Division of the Anchor Fast Fence Co., Baltimore.

Automatic transfer from cabin heating in flight and on the surface is one feature of the new type heater, it was said. The heater is used to defrost the pilot's and bombardier's windows and for pre-heating engines in arctic temperatures. Company officials say it has functioned properly at temperatures as low as 72 degrees below zero and at altitudes up to 40,000 feet. Using about the same amount of electricity as the average rooming lamp, it has an hourly output of 90,000 BTU in flight.



Fabricating Glass-Plastic Fuselage. Piece of glass cloth impregnated with resin are laid over a male mold. The plus, comprising a complete half of the fuselage skin, are trimmed before transfer to female mold.

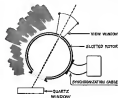
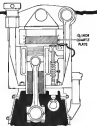


Chip Saver in Action. The compressed air lines at left force chips from this extrusion milling machine at the Glenn L. Martin Baltimore plant into the ducts and out into the portable receptacle at right, saving the labor of a man and facilitating scrap salvage of the metal.



How we "freeze" flames to make hot airplanes

Aircraft engine—run on flames from ignited gasoline. And how the flames burn determines how efficiently the engine performs. If the air-fuel mixture in the combustion chamber burns evenly and smoothly, far greater "push" is exerted on the cylinder than if it explodes quickly and sharply. Taming these explosions in high-compression engines is largely a matter of controlling the detonation characteristics of fuels. To see these new fuels in action, to learn how to improve them, Standard of California scientists developed this engine. It has a quartz plate in the cylinder head so that the actual combustion of test gasoline can be studied.



To "freeze" the flames, to apparently slow down the combustion process so that it can be studied, Standard scientists synchronized this strobeoscope with the glow-tipped engine. Through a slit in the strobeoscope's whirling rotor one phase of the combustion process is viewed in successive explosions, giving the appearance of a continuous picture. Or it can be adjusted to follow the entire process like a stop-motion movie. Thus scientists can actually see how experimental fuels perform.



This is the geography of an explosion, what a Standard scientist sees through the atmosphere. Notice the violent explosion in frame A-4. This is knock, or detonation. Such violent explosions may dampen power, mean engine failure. Equiplume: No hot engine with the window in its head enables Standard scientists to improve aircraft fuels so that detonation can be avoided. With new Standard super fuels, flying combat teams get maximum speed and power from their engines—and designers can blueprint even more powerful and efficient engines for the sky armies of tomorrow.

TRANSPORT

TWA Buys Hawaiian Line Interest In 2d Overseas Expansion Move

Acquisition of 20 percent of shares announced simultaneously with cancellation of own application for route to Hawaii in favor of smaller company's request.

By MERLIN MICKEL

Transcontinental & Western Air, through purchase of a 20 percent interest in Hawaiian Airlines, Ltd., has taken the second cautious step toward entrenching itself in areas outside continental United States where it sees possibilities for strong aviation development. Cash involved was between \$300,000 and \$400,000.

TWA at the same time withdrew its own application for routes between Hawaii and the mainland in favor of a similar application by the smaller airline.

Bought TACA Interest—First of TWA's deals of this nature earned the United States took place a little more than six months ago, when TWA disclosed it had bought for \$1,200,000 a substantial interest in TACA, important South and Central American operation.

The newest move was described in a joint announcement by Jack Frye, TWA president, and Stanley

C. Kennedy, president of Hawaiian, as furtherance of TWA's policy of minority participation in "certain leading, established and well-managed companies" outside the United States.

Overseas Domestic Operations—It could also be taken as further evidence that operations in continental United States do not intend to be restricted by continental confines, regardless of whether post-war national aviation policy calls for constraints in a chosen environment.

international operation. The proposed routes between the United States and Hawaii, however, do not rate as an international operation. Because Hawaii is a territory, they constitute an overseas domestic operation.

TWA's latest move, coupled with its declaration of policy, raises the question of what its next step will be. Despite official silence, it is known to have a number of nega-



ON AAF AIRWAY TO ALASKA

This log Administration Building, operated by Royal Canadian Air Force, is used by the U. S. Army Air Force at Watson Lake on the Northwest Coast.

Base (Alaska Army) is northern British Columbia. Its fortress-like appearance is a sharp contrast to the conventional airfield administration building.

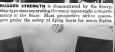
Answer to an Airline's Prayer... The Martin Mars Transport!

In the \$2-00,000 Mars transport, postwar airline operators will have no visionary, untried design, no hastily converted bomber. Instead, they will have a successful type, thoroughly tested in overseas transportation. The 20 seats—ships of the original Mars are being built from the ground up as transports. Only more elaborate furnishings are needed to change them into luxury buses. More important, production lines for the JRM will, at war's end, be

completely toolled and manned by experienced workers. This means fast delivery of commercial versions in tomorrow's swing toward supremacy of the skyways. For information, write Theodore L. Martin Co., Baltimore-5, Md. or 1400 N. Main Street, Chicago—Chicago.

Martin
AIRCRAFT

Division of The Martin Company, Inc.



VISUALIZE THIS COMFORT, smartly redecorated, on a commercial version of the Mars-type transport. These seats passengers would find in good, quiet or a pleasant chat. That is a real flying ship!

PIVOTING GALLEY... only one of many in this plane... a control of compartments. Profiles of the galley... the Mars also boasts a new, 120-volt electrical system.



CONTROL CENTER of the Mars-type, as seen from the pilot's compartment, shows captain's desk, radio console, and other communications for co-pilot and flight engineer. This is the left hand of the Mars.

Half a dozen applicants are on file for these routes half way across the Pacific. In addition to Hawaiian, Northwest, United Air Lines and Western Air Lines among the operating companies, applications have come from Matson Navigation Co. and Ryan School of Aeronautics. United filed on the day TWA withdrew.

Controlled by Ship Line—United TWA made its purchase, in which about 8000 shares of stock changed hands, 55 percent of Hawaiian's stock was owned by Inter-Island Steam Navigation Co., Ltd. Kennedy is also president of the steamship company. The relationship which finds the steamship company in control of an airline has continued because Hawaiian's operation has been conducted under a "transit certificate." Nevertheless, if Hawaiian receives a route in the West Coast, the plan is that Inter-Island will divert itself of its control, stock aside from TWA's 20 percent going to independent shareholders including those who now own equities in the steamship company.

It is doubtful that TWA will hold the largest block of stock, despite this distribution. Kennedy and other officers in the company may be expected to purchase a larger block, since there is a desire both to retain them in their present positions and preclude any question of control.

1943 Revenues Up—Hawman reported for 1943 a net profit of \$122,553 after deductions of \$308,333 for territorial, federal income and excess profits taxes. Operating revenues amounted to \$1,613,051, a 18.24 percent increase over 1942. Passenger revenue was up \$176,552 and freight \$122,393.

Hawman ranked fourth in January among the domestic airlines in earnings of expense and air freight, with a total percentage for the month of 514.75. In 1943, it carried 166,114 passengers, an increase of 31.04 percent over 1942. Operating revenues last year came 77 percent from passengers, 17.58 from air freight and express, 3.56 from excess baggage, 0.95 from air mail, and 0.97 from miscellaneous sources.

Pan American is the only carrier presently articulated to fly from the continent to Hawaii. United and Continental fly the trip under war contract, and it is of course a frequent operation by the Air Transport Corporation and Naval Air Transport Service.

C&S Recommended for Route Linking Detroit and Memphis

Report of Examiners Wren and Ruben would permit completion of long leg in direct border-to-border air service.

Completion of a long link in direct border-to-border air service between Detroit and New Orleans is proposed in a report by Civil Aeronautics Board examiners recommending that Chicago and Southern, one of the smaller airlines, be certificated for a route from Memphis to Detroit.

The report on Detroit-St. Louis-Memphis consolidated examiners by Examiners Thomas L. Wren and F. Merrill Ruben accedes partly to requests for additional signs by two of the major lines and two smaller ones. The former are American Airlines and Transcontinental & Western Air, the latter Chicago and Southern and Mid-Continent Airlines. By Eastern Air Lines and United Air Lines, the two other "big four" operators, are recommended for denial.

Direct Service—Direct service would be provided for the first

time between Toledo and Indianapolis via Port Wayne and Muskegon, Ind., to serve the highly-industrialized southern Indiana area. They also would link Evansville, Ind., and Memphis, Tenn., with a direct route for the first time. At least two cities—Paducah, Ky., and Macon—would thereby receive their first air service.

Selection of Chicago and Southern for an important segment of the routes proposed would strengthen that line "without actually affecting other carriers." Establishment of service by Chicago and Southern from Detroit to Memphis, Wren and Ruben say, "would make available a single-carrier operation from the great industrial center of Detroit to the Port of New Orleans and to southeastern Texas points between which there is a great community of interest."

Memphis-Muskegon Link—Chicago and Southern already connect Memphis with Houston on AM 53 and New Orleans on AM 8, the latter running virtually straight north from Chicago. CAB's acceptance of the recommendations would add 455 miles to its route structure.

The proposed extension of the line's AM 53 to Detroit from Memphis would be via Paducah, Evansville, Indianapolis, Anderson-Muskegon-New Castle, Port Wayne, and Toledo. The line also had asked certification between St. Louis and Detroit and Cleveland via Terre Haute, Indianapolis, Anderson-Muskegon, Port Wayne and Toledo, but this was again for denial.

American Gets Extension—For American, the examiners recommended extension of its Cleveland to St. Louis via Port Wayne, Anderson-Muskegon-New Castle, and Indianapolis, on condition, however, that flights between Indianapolis and St. Louis originate or terminate at or east of Cleveland. American also a certificate also between St. Louis and Detroit and Cleveland via Springfield, Ill., Indianapolis, Anderson-Muskegon-New Castle and Port Wayne, Ind.

Mid-Continent's request for per-



CONSTELLATION CATCHETS:

First flight covers from the Constellation's trip from Burbank to Washington have been turned over to the New York Chapter of American Red Cross for auction or sale in New York's Red Cross War Fund drive. The special catches are postmarked Los Angeles 2 a.m., Apr. 17 and Washington National Airport 2 p.m., Apr. 17, an elegant mailing period of nine hours. In the picture, A. D. Williams, Jr., TWA's New York District traffic manager, poses a handful of the stamps to Mrs. Louis W. Douglas, director of the New York chapter's fund raising service.



PAA GIVES PATCHING TESTS:

Pan American Airways' La Guardia Field terminal is probably the only place in the country where plane parts are purposely damaged so repairs can be made. A wing section is punched and then patched as a test for weaknesses in repair for foreign airlines. Showing how it's done are Charles Herovak, metal shop instructor, with the hatchet, and Jack Bruce and Evelyn Leach, metal shop employees, with rivet gun and shears to apply the patch.

mission to extend AM 41 from Kansas City to St. Louis via Columbus, Mo., if awarded as the emergency proviso, would constitute the base of a triangular route with Des Moines at the apex, although 41 extends north from the Iowa capital. MOA also serves Omaha as AM 26. Both routes go to St. Paul-Minneapolis, and 26 goes south to Tulsa. However, Wrenn said MOA did not approve this line's request for a route between St. Louis and Detroit and Cleveland via Denver and Denver, Ill., Lafayette, Ind., Indianapolis, Fort Wayne, Ann Arbor, Mich., and Toledo.

Terre Haute Stop—The eastern proposal that TWA's temporary stop at Terre Haute, Ind., between Indianapolis and St. Louis on transcontinental AM 2 be permanent. In addition, TWA asks a certificate between Indianapolis and Detroit and Cleveland via Anderson-Muncie, Marion, Fort Wayne and Toledo, but this is recommended for denial.

In the applications by the two other big air carriers that fail to get the emergency sanction, Eastern wants a certificate between Memphis and Detroit via Peoria, Evansville, Terre Haute, Indianapolis, Anderson-Muncie-New Castle, Fort Wayne and Toledo, while United seeks authorization

between Detroit and Cleveland and Omaha via Toledo, Fort Wayne, Anderson-Muncie-New Castle, Indianapolis, Terre Haute and St. Louis, and also via Toledo and St. Louis.

It was considered likely that TWA, American and Mid-Continent could serve the additional routes suggested by the emergency with their present equipment. Whether Chicago and Southern would be able to operate its recommended extension was more in doubt.

Gets Athens Stop

Application by All American Aviation to serve Athens, Ohio, as an intermediate point on AM 49 has been approved by the Civil Aeronautics Board. The point was added to All American's route because of increased use of normal air to Athens.

As the result of a recent mail revolt, the Post Office Department had requested that a carrier be authorized to perform that service. The coast showed a 507 percent increase in airmail from Athens since 1943.

Improves Service—The new service authorized will improve delivery of airmail from Athens to Cincinnati, Pittsburgh, Washington and New York.

U. S.-Canada Route Hearings Started

Certification of any of eight applications believed distant because of international aspect.

Civil Aeronautics Board examiners have started hearings on U. S.-Canada route applications, but because of their international aspect, any certification probably is distant. If new routes over the border are placed in operation, the temporary nature of the reciprocal agreement between the two countries, which can expire six months after the war, might be expected to give them the same degree of importance.

As in all cases involving foreign air routes, there would have to be cleared through diplomatic channels of both governments before they could start operations. **Standing Rights Not Involved**—While the Civil Aeronautics Act requires hearings on all applications it is not necessary that possession of landing rights be shown. In the American Export case, the U. S. Circuit Court of Appeals said: "The acquisition of landing rights is dependent on negotiations between this government and the foreign government concerned and involves matters peculiarly within the field of executive discretion."

— The possession of landing rights is not required in order to obtain a certificate of public convenience and necessity." **Sought by Eight Lines**—Eight carriers are attempting to show the need for new and additional service between New York, Philadelphia, Baltimore and Washington, and points in Canada: PCA, United, Eastern, American and Colonial and these new-entrants, Page Airways, Nylon Flying Service and Union Airways are involved.

Colonial asks to connect Montreal, N. Y., with Ottawa and Montreal, and to operate between Burlington, Vt., and Ottawa. They also seek Montreal-New York-Washington via Watertown, Syracuse, Buffalo, Johnson City and Binghamton, N. Y., and York, Lancaster and Harrisburg, Pa. **Extension Sought**—American seeks to extend AM 3 south to include Allentown-Bethlehem and Philadelphia and north to Ottawa from Syracuse area. Montreal from Syracuse via Watertown and Montreal.

Extension Sought—American seeks to extend AM 3 south to include Allentown-Bethlehem and Philadelphia and north to Ottawa from Syracuse area. Montreal from Syracuse via Watertown and Montreal.

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**... HIGH PERFORMANCE
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Acoustical Uses

Its acoustical uses include installation in pilot's, radio, and navigator's compartments. The merit factor is over 80, indicating in this respect that its performance per pound is high.

Thermal Uses, Too

Its thermal uses include insulation on hot-air ducts and fittings on aircraft. It is also used to insulate cargo and troop transport compartments. Here it provides the optimum in insulating effect per pound of weight. It also absorbs the minimum of moisture under extremely humid conditions.

In both acoustical and thermal uses, the advantages of an inert, isomeric insulating material apply.

Fiberglas XM-PF Aircraft Insulation is now available for military aircraft use in densities of 1 lb. and 1 1/2 lbs. per cubic foot. Get in touch with the branch office nearest you, Owens-Corning Fiberglas Corporation, Toledo 1, Ohio. In Canada, Fiberglas Canada, Ltd., Oakville, Ontario.

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PG 10, Rev. 2, 2-24-57



Main Office, Coated Cloth, Tapes, Sewing Thread, and Other Fibers are also serving important aircraft uses.

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PITTSBURGH
ST. LOUIS

Pennsylvania Central Airlines completes 17 years of progress



17 years ago, from an old hangar on the edge of grass sodded Beris Field spring out of the world's finest commercial airlines. Pennsylvania Central has progressed with and off-times ahead of aviation progress in general, establishing one of the greatest safety records in aviation and introducing many innovations designed to improve service and advance air transportation.

As with all commercial aviation, radio communications has played a vital role in the progress of PCA. Eimac-McCallough, Inc., whose Pennsylvania Central Airlines on their 17th anniversary with great pride in the fact that Eimac tubes occupy the key sockets in PCA ground stations throughout the system. A fact which is some measure, has helped Eimac to become first choice of leading Electronic Engineers throughout the world.

Mr. E. Raymond, Chief of Ground Station Maintenance, says: "PCA has in operation at the present time approximately two hundred and fifty Eimac tubes of various types. During the past few years, the dependability and long life of these tubes has promoted our confidence and consideration in recommending their incorporation in new equipment wherever possible."

Follow the leaders to

Eimac
TUBES

ETS-1000/1000, INC., 440 San Mateo Ave., SAN MATEO, CALIF.
Photo located at San Bruno, California and San Jose City, Utah



CAB Starts Work on Coast Applications

Action began with prehearing conference, 23 carriers involved.

Civil Aeronautics Board has commenced action on a large group of applications requesting air carrier service in the West Coast area with a pre-hearing conference before CAB Examiners Brown and Rubin.

Twenty-three applicants are involved. The lead docket is an application filed by Oregon Airways, Inc., in May, 1939.

Consolidation Discussed—Consideration of the various applications into one proceeding was discussed at the conference. John W. Foreman, whose application includes a Chicago-San Francisco route which would not be considered in a consolidated proceeding, was the only strong objector. Groundwork Corp. also indicated it might not approve consolidation.

In line with CAB policy, the examiners discussed the calling of city witnesses when hearings are held, inasmuch as 406 communities are listed in the applications.

Justice Dept. May Intervene—Counsel for the Department of Justice was present at the conference and indicated the department might seek to intervene. A majority of the counsel present said a hearing of the case on the

Meet in London

A group of international air traffic operators met in London last week for an unofficial discussion of aircraft and equipment possibilities for post-war operations.

The State Department took no official notice of the meeting. Some sources commented privately, however, that they thought its effect on the actual post-war situation would be negligible.

According to Expert Airlines was the only United States carrier represented.

West Coast seemed preferable, but the time and place have yet to be ascertained.

Applicants include: American Airlines; Northwest Airlines, TWA, United Air Lines, Western Air Lines, Oregon Airways, Inc., West Coast Airlines, Inc., Southwest Airways Co., Greyhound Corp., Engel Air Feeder Lines, Coast Aviation Corp., North Coast Transportation Co., Pacific Northwest Airways, Washington Motor Coach Co.; London Lawton, Chrysler, Interstate Airlines, Inc.; Oregon Motor Stages, Albert L. Zimmerman, Roy F. Owen Co.; Bremerton-Tacoma Stages, Inc.; John W. Foreman, Interstate Transit Lines, and Nevada Pacific Airlines, Inc.

Canada Air Group Asks Flight Strips

Aeronautical Institute seeks to revise regulations to make jobs for war veterans.

Necessity of having Canadian air regulations changed to allow building of landing strips for feeder airlines and private planes to give post-war employment to returning air force personnel highlighted the first annual conference of the Aeronautical Institute of Canada at Toronto last week.

American and Canadian aviation experts told assembled and provincial representatives among the more than 300 at the sessions how to build and finance the air strips for communities not now served by airports.

Pattern of Ties of Plan—More than 100 municipalities and eight provincial governments were represented at the two-day sessions. Representatives of the Canadian, British, Polish, Norwegian and Czech air forces, and aircraft and necessary manufacturers also attended.

C. R. Patterson, president of the Institute, described his visits to 18 Canadian communities during the year, outlining proposals whereby the municipalities, province and federal government would each bear one-third of the cost of



AMERICAN USES SALES TACTICS TO GET EMPLOYEES:

American Airlines is using a ground floor show again in the Pershing Square Building, New York City, to sell the public on working for an airline. Pictures show the display window of the employment office and the interior of the "screening" room where



prospective employees receive their first interview. The sign in the window says "Screening Clocks Needed" and the current display depicts a stockroom area. Inside, upholstered theater seats add to the comfort of applicants while they await their turn.

INVASION *and the* FINAL CHALLENGE

The idea that our national security some day would depend upon the successful invasion of continental Europe by our armed forces was inconceivable to the average American but a few short years ago. Yet, today our whole strength is assembled to that very action and for assuring a sound and permanent peace.

America became great without aggression . . . without tyranny. Our greatness has been achieved without destroying others . . . ours is a history of unprecedented industrial progress, of development of our own resources and reliance on our own efforts.

Aggression is foreign to American philosophy. Yet, today we find ourselves faced with the choice of destroying or being destroyed. Today we are confronted by the hard fact that the kind of peace which we all so fervently desire can be achieved only by crushing autocracy and by removing the causes of aggression.

We are now engaged in the accomplishment of the first objective. Since Pearl Harbor a complacent, peace-loving America—the largest of the “soft” and “decadent” democracies—has grown strong and tough. Out of the inherent virility of

a free people we have moulded the mightiest force for invasion and attack that the world has ever seen.

We have reached our peak rates of war production. We are producing as much war equipment as all the rest of the world combined.

History will record our industrial mobilization as a phenomenal achievement.

The battle of production has been won!

The full might of our armed forces and those of our allies unleashed against the Axis war machine will bring eventual victory. Two and a half years of intensive preparation, backed by 168 years of growth as a free nation, has given us superiority over twenty years of painstaking preparation by the totalitarian and militaristic countries with their enslaved peoples.

Every American has contributed toward this powerful offensive. Our manufacturers and business leaders have exerted their fullest efforts. Our industries have mobilized their tremendous resources—tapped to the fullest degree their inventive and productive genius. The men and women in the factories, on the farms, and in the mills and mines have played a magnificent

part in the tremendous production program. Citizens all are making their contribution to the armed victory that lies ahead.

We have demonstrated that a free people under a free enterprise economy can unite in a common purpose.

* * *

When the war is won, we shall be faced by our second objective . . . removing the causes of aggression. This is a social challenge. A challenge to those who would sacrifice our democratic way of life for personal gains or foreign ideologies.

The best insurance for the continuance of our democracy is a successful democracy. That means a dynamic and not a static democracy. All of us who want to preserve the ideals that have made America . . . and that includes all but a handful of extremists . . . must determine to find the policies and programs which will permit us to make the most of the abundance nature has provided for us.

To achieve this end we must recognize the fact that we are but a wheel in the machinery of world economy. A wheel that must drive or be driven. A wheel that must mesh smoothly with the many other wheels or be stripped of its cogs.

We are the only nation on earth free enough and strong enough to shape the mould of its own destiny. We can be hampered by nothing but our own confusion.

* * *

The mind and the heart of all America today brood over the shores of Britain and watch over the narrow waters that wash the beaches of the Continent. And the prayers of all America go with each of those who embark upon that epic passage.

Those of us at home who are producing the fighting tools and who are so earnestly concerned with the problems that will face a postwar America, should see now, even if we may never have seen it before, that all our plans will be worth just exactly what the men and women who make that passage are prepared, competent, and inspired by their leadership to make them worth.

For those men and women are America!

They have gone out from rich homes and poor homes alike, from farms and factories, from schools and churches, from mines and ranches, from offices and studios, to take their places in the battle line. They are a cross-section of the America that is to be.

Whoever may draw the plans for that America, it is those men and women who will make the plans good. Invasion is their first step toward that end. May their work be speedily done, and may our plans be worthy of that work.



President, McGraw-Hill Publishing Company, Inc.

Aircraft Bears Fail to Account For Normal Growth, Says Analysis

Har's Ltd., distributors of Aviation Group Shares, advances constructive view as to industry's current position; says 1950 as possible peak year for production around five billion.

By ROGER WILCO

Not all investment dealers have despaired of the future outlook for aircraft equities. In a current analysis, Har's Ltd. advances a constructive view as to the industry's current position and "normal" growth pattern. It must be recognized that this firm is distributor and merchandiser of Aviation Group Shares, an investment trust devoted primarily to owning aviation securities. Despite this obvious bias, the review takes an interesting viewpoint deserving of careful attention.

The contention is advanced that, regardless of the war, aircraft manufacturing would have developed as a typical growth industry. Instead, the investor has overlooked that it is alleged perspective has become warped from viewing the industry's aviation "war production" and thus visualizing a "hatched aftermath of collapse."

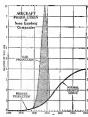
Normal Growth Curve.—To substantiate this appraisal of aviation values, a normal growth curve, based on the production figures of the leading aircraft manufacturers, is projected and reproduced in the accompanying chart. These nine companies are represented to account for 90 percent of the output of the entire aircraft manufacturing industry in the U.S. in exchange of such factors as General Motors, Chrysler and other assembly producers. These nine companies are: Boeing, Consolidated-Tulaco, Curtiss-Wright, Douglas, Grumman, Lockheed, Martin, North American and United Aircraft.

The chart starts with the year 1934, in which period the output of the nine companies aggregated about \$46,000,000. From this point, production for subsequent years has been plotted with estimates advanced for 1953 and 1955.

Peak Year Put in 1950.—The realm of the unknown is penetrated with an interesting normal growth curve extended from the year 1939 to an assumed peak year of 1950, when production of \$4,600,000,000 has been estimated. On the premise that these nine companies approximate 90 percent of the industry's production, the assumption is further made that the aircraft industry will produce \$5,000,000,000 of planes and engines in 1950.

Supporting that projection, Har's Ltd. asserts that, measured as automobile industry sales of wholesale prices approached almost \$4,500,000,000 in 1929, when the population was 131,666,666, "an estimate of \$5,000,000,000 for the aircraft industry by 1950, when the population may be around 358,666,666 would appear conservative."

What's wrong with this picture?
Markets.—Some observers may feel to see the consistency in comparing the automotive and aviation markets as they differ radically.



For example, military purchases appear as the major source of business to the aircraft builders in the immediate years to come. Here again, some question may be raised as to the level of production in the peak year of 1950. So much is dependent upon factors which may remain vague for an indefinite period.

With military purchases representing the bulk of future aircraft billings, how can such volume be determined when it is unknown if a peaceful or hostile world will emerge following the present conflict. The peace terms undoubtedly will influence the scope of aviation fleets to be maintained. In this respect, the whims of public opinion, as expressed through Congress, are expressed unpredictable. A huge air force may be demanded as a defense. Then again, a nation weary of war may place its faith in armaments and embark upon a disarmament policy. This latter course, however, again entirely for the immediate future.

World Production.—Further, England, Russia and, to a lesser extent Canada and other of our Allies, will also have tremendous aircraft production facilities spring for sale. In other words, United States builders will not have a wide-open world market for their aircraft wares.

Despite the tremendous gains expected in commercial air transportation, the fleet of planes required to meet the demand does not appear to be of the proportions to swell the order backlogs of the builders.

National Income.—The small plane market may develop by leaps and bounds and may truly rival the automotive industry in growth. It is here where the assumption, projected in 1950, of a similarity of the auto and plane groups may have significance. Here too, however, a fundamental fallacy exists, as the level of national income will be a far more important determining influence than the mere growth of population. For that matter, the same criterion may be said to hold true for commercial and military aviation purchases.

In any event, the Har's analysis does not anticipate the industry's dropping to nothing near to its pre-war 1933-1935 level at the conclusion of hostilities. Instead, normal business for 1955 is placed at an annual rate of about \$1,500,000,000 or \$1,250,000,000.

Aircraft Shares Down.—The analysis

you further declares that, since 1939, aircraft shares have steadily declined in the face of substantial wartime earnings and the "unchanged favorable long-term outlook." The market is approximately at the 1935 level, when earnings were negligible and production was under \$16,000,000, or about one-twentieth of the estimated post-war resumption level of the industry.

Some interesting figures are also presented as to the ratio of present market prices in current and post-war earnings. It is asserted that, in the aggregate, the status of the nine companies presented are currently priced at around two times reasonable post-war earnings.
Superstition.—Premised on its projections, Har's concludes that due to the "superstition of investors, leading aircraft stocks today are definitely undervalued in relation to what appear to be reasonable post-war prospects."

Regardless of how this market prognostication develops, there can be no denying the fact that there is considerable potential in the belief of a "normal" growth pattern for the aircraft industry.

Air Stock Trading Reported by SEC

Reveals transactions in over dozen by officials of airline and aircraft firms

A summary of stock transactions, involving airlines and aircraft and equipment manufacturers, has been reported for March by the Securities and Exchange Commission.

Samuel J. Solomon, director of Northeast Airlines, Inc., sold 1481 shares of the company's common during March, according to reports made public by the Commission. At the close of the month Mr. Solomon had 15,990 shares of Northeast's common remaining in his portfolio.

John B. Longman, director of Chicago and Southern Air Lines, reported purchase of 848 shares and sale of 100 shares of common through a joint account, increasing holdings of the account to 3,543 shares.

Colonial Airlines.—Sigmond J. Liss, president of Colonial Airlines, Inc., sold 200 common during March, reducing his ownership to 18,410 shares. A C. Dick, secretary, sold 361 common stock in February, while Edward S. Red-

Canadian Output

Canadian aircraft production for the first quarter of 1944 totaled 1,000 units compared with 1,000 in the 1943 period, an increase of one-third. On a percentage basis, however, the first quarter was up 60 percent from 1,000,000 units to 1,000,000 units in 1944, according to figures released by the Department of Munitions and Supply, Ottawa. This reflects the strong in Canadian aircraft production from fighter or trainers to heavier service craft.

John S. Woodbridge, director of Pan American Airways Corp., sold 101, leaving him 1,066 shares.

George L. Bell, vice-president, in July, 1935, purchased 5,259 shares of Pan American Airways stock.

Harold Fabian, director of Western Air Lines, Inc., purchased 100 common.

American Airlines.—Late reports filed by officials of American Airlines, Inc., disclosed purchase of 90 common in February by Chandler Howey, director, and sale of 200 shares last December by Gerald M. Moore, vice-president. Edward T. Clark, director of Pan American Central Airlines, reported purchase of 200 in February.

Among the manufacturing corporations, Lawrence D. Bell sold 1,500 Bell Aircraft Corp. common in March, leaving him 25,411 shares.

Consolidated Value.—Raymond B. Pratt, director of Consolidated Value Aircraft Corp., sold his entire holdings of 390 preferred and also sold 500 common. His ownership at the end of March consisted of 888 common. Louis A. Johnson, director, sold 335 common in January.

William K. Abel, vice-president of Glenn L. Martin Co., sold 184 common during March, giving him a balance of 500 shares. G. C. Woodward, secretary of Ryan Aeronautical Co., sold 198 common, leaving him 108 shares.

J. A. Harris, 3rd, director and principal stockholder of Jacobs Aircraft Repair Co., gave away 2,000 shares of common capital stock in March, reducing his ownership to 231,837 shares.

John B. Walker, director of Aircraft Accessories, sold 1,060 common during February.

Financial Reports

Mississippi-Henrywell Regulator Co. reports net income of \$74,736.98, including an estimated postwar interest of \$180,132, for quarter ended Mar. 31, 1944, allowing for reserves for taxes and provisions for estimated refunds to the government, equivalent, after preferred dividends, to 46 cents a share in 1,240,000 common before the post-war refund and 33 cents a share after adding such a refund. Net income for the 1943 period was \$925,213, including post-war refund of \$180,132, for quarter ended Mar. 31, 1944, allowing for reserves for taxes and provisions for estimated refunds to the government. Comparative results to reflect the two-for-one split in stock carried out in March, 1944, would be 48 cents a share.

Electrically Heated Flying Suits Tested

Electrically heated flying equipment developed by the General Electric Co. for the Army Air Forces is being tested in an unusual atmosphere at the Mount Washington, N. H., weather observatory, where wind velocities reach 211 miles an hour and the temperature drops to 59 degrees below zero.

The observatory is atop the 6,340-foot mountain, and on average of only 15 days out of every 100 are clear. During the experiments, the men in the flying suits wear the flying suit, goggles and boots as they move about checking their instruments.

New Torque Wrench

A highly versatile production line torque wrench, giving both an audible and physical signal when desired load is reached, has been developed by Richmond Inc., Los Angeles.

The company announced that the wrench can be set at torque specified by the buyers and ranging from 10 to 750 inch-pounds. Torque increments are held to 2 percent (or less, if desired). It is said. This socket-drive model uses a lock connection and is adaptable to a numerous heads, extensions, crow's feet, etc., and does not require dial, battery indicators or bulky equipment. It is the company announcement says, is making it valuable for use in dark or noisy areas, made a wing or fuselage or on the flight ramp.

Wright Field Progress

THE AIRCRAFT INDUSTRY justifiably has received liberal credit constantly in this war for its productive and engineering genius. But the public has heard little about the aerodynamicists of the Army Air Forces' Military Command Laboratories at Wright Field, because military secrets cannot be announced.

With the realization that properly directed information can have an important effect on the war effort, Materiel Command, which is responsible for engineering, development, production and inspection of all AAF equipment, broke a rule of some 25 years to admit members of the Aviation Writers Association to their inner sanctum, provided they would keep the nation's secrets.

The officers displayed and told secrets to the writers—for background use only—which made the field's public relations officers blinch. The writers, who pride themselves on keeping abreast of today's activities and tomorrow's possibilities, were astonished.

The public would be amazed. It would find difficult in believing a few of our airplanes who prevail in considering today's limits also those of 1919. All aviation development has followed step by step the development of materials. The war is giving unprecedented impetus to such technological research.

The writers saw the Bell jet propulsion "quint" start its turbine, ignite, take off with a thin trailing wing of smoke, and land. A huge wind tunnel was testing an engine and wing section of a giant which will be flying in another year. They watched radar and laser demonstrations and heard of new devices which will outsize the present mechanisms. They peered through the Norden and Cherry bomb sights, both under constant improvement. They saw the Boeing B-29 Superfortress, the Northrop Black Widow, the improved Bell fighter large and small ships which cannot yet be mentioned, the Sikorsky helicopter, experimental Mitchell, Funnell and Labovitz with gadgets yet to surprise the enemy, handaxes and their rocket relatives, cannon, new guns, gun installations and controls.

Thickly accurate bombgraphs and jet propulsion plans, marvelous as they have turned out to be, will soon give way to even greater marvels. "Mr. Gen. Charles E. Brown," commanding general, emphasized, repeating a statement made several weeks ago.

Brig. Gen. Franklin O. Carroll, in an hour's address illustrated with special charts, outlined the future plans and possibilities of jet propulsion, and the constant progress of an cooled and liquid cooled engines, which will be with us for a long time, although constantly pushed to higher horsepower outputs. One engine, for example, is producing twice the horsepower of its early days.

Engines producing the equivalent of 6,000 hp. are in sight.

Jet 490 mph. speed limit has been exceeded substantially. It is probably safe to say that we shall be over the 500 mph. hurdle soon.

Big ships are on the way—of staggering size. They

are bigger than most of us had realized. They will bring non-military versions which will fly experimentally to determine costs and economic possibilities, and they must prove out. Some, admittedly, will be orphans. Others will go into production and take over long-range commercial business gradually.

Vests at 50,000 feet altitude will come.

Unconventional aircraft of flying wings, pusher and contra-rotating propellers, combinations of jet propellers and conventional power all are to be given their chance.

"One small group of engineers here has been told never to have a practical idea," Gen. Carroll reports. "They can draw some fancy airplanes, but they may not be so fancy or impractical three or five years from now. These men must keep ahead of today's possibilities."

That is typical of the philosophy the Wright Field visitor finds.

Sensible Airport Planning

WILLIAM A. MARA, former Station executive who knows his private flying, wants a plan which deserves the widest circulation in government and Congressional circles. He is one of a group of this country's sensible, plain-speaking aviation realists who know that the safest, most economical lightplane built will not be operating at anything approaching its maximum cross-country utility without an adequate network of tracts available for takeoffs and landings.

The several hundred airline and military airports now in existence, and others like them, will always be needed but they are not the types of airports the small towns can afford, or in which the personal airplane owner is even interested, Mr. Mara points out.

Mara advocates 20,000 new air strips placed ten miles apart in a system of squares which would cover the country. Cost would be about \$90,000,000, or approximately \$4,500 per strip, contrasted with about \$25,000 for a single mile of the national highway system.

Each strip would be from 100 to 200 feet wide and 1,000 to 2,000 feet long.

Along with the air strip, the pilot will need a simple system of aerial markers or road signs. Mara writes in the new issue of Consolidated Value's magazine, *Plane Talk*.

"Those will tell him where he is at any time, and so permit him to fly without learning a complicated system of navigation."

Mara's plan is one of several simple systems of airports and marking being discussed. All of them have merit.

The single warning which must be made clear to government and in Congress is to fight off any tendency to use private flying as a means of pumping real estate prices and enriching local landowners and contractors by buying into unnecessarily large and setting up elaborate facilities with high maintenance costs which will turn the strictly business taxpayer against all flying. Extravagance in small airport planning will be irreparable.

ROBERT H. WOOD



When Tomorrow Meets Yesterday...In CHINA

For untold centuries, the plodding water buffalo has been the means of moving in the form of millions of Chinese. Unimproved and unimproved, these great slow beasts are a fundamental source of motive power for transportation—moving the farmers of China, moving the automobiles—to countless China.

But in tomorrow's China... the China which will move about Victory, the development and rapid expansion of mechanical and personal transportation, may be little short of phenomenal.

The biplane may be a familiar sight in the Blue China skies over landscapes both rural and urban. And great passenger planes and cargo carriers will be able to transport more men and merchandise there faster in numbers than carts and camels might carry in many months.

For new China now numbers among her sons and daughters, thousands of trained, keen-eyed pilots and skilled aircraft maintenance workers—millions of progressive, well-educated citizens whose courage, intelligence and energy can bring China the prosperity and position it so richly deserves... standing in World affairs as ranking as the ancient Chinese traditions of culture and commerce. The Victory must come first.

Right now, at McDonnell, we're working these things a day making planes, parts, and pieces for the United Nations' war effort. But after Victory, we hope to add our contribution to the development of China's post-war aviation industry... in the prosperity which can be China's through a fuller realization of its own rich resources.

McDONNELL Aircraft Corporation

Manufacturers of PLANES • PARTS • PLASTICS • SAINT LOUIS • MEMPHIS •

TODAY AND TOMORROW

Today, tomorrow and until the war is won every Allison engine is built to a standard that embraces five "must" qualities: ★ *Performance* that helps our fighters win battles. ★ *Reliability* on which our pilots can depend.

★ *Smoothness* to lessen pilot fatigue.

★ *Economy* for greatest fighting range. ★ *Durability* for maximum fighting readiness. ★

Vital now for our flyers, these are also characteristics you will want in engines that will power postwar planes.

POWERED BY ALLISON

The more than 50,000 Allison engines built for the U. S. Army Air Forces power the following planes: P-38—Lightning • P-39—Aircobra P-40—Warhawk • A-36 and P-51—Mustang

LIQUID-COOLED AIRCRAFT ENGINES

Allison
DIVISION OF
Indianapolis, Indiana



**KEEP AMERICA STRONG
BUY MORE WAR BONDS**

Every Sunday Afternoon—GENERAL MOTORS SYMPHONY OF THE AIR—NBC Network